

The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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WITH SUPPLEMENT. PRICE SIXPENCE PER ANNUM, BY POST £1 4s.

MR. JAMES H. CROFTS, STOCK AND SHARE BROKER, AND MINING SHARE DEALER,
No. 1, FINCH LANE, CORNHILL, LONDON, E.C.
ESTABLISHED 1842.

BUSINESS transacted in all descriptions of MINING Stocks and Shares (British and Foreign), Consols, Banks, Bonds (Foreign and Colonial), Railways, Insurance, Assurance, Telegraph, Tramway, Shipping, Canal, Gas, Water, and Dock Shares, and all Miscellaneous Shares.

BUSINESS negotiated in Stocks and Shares not having a general market value.

Every Friday a general and reliable List issued (a copy of which will be forwarded regularly upon application), containing closing prices of the week.

MINES INSPECTED.

BANKERS: CITY BANK, LONDON—SOUTH CORNWALL BANK, ST. AUSTELL.

SPECIAL DEALINGS in the following, or part:—
100 Almada, 6s. 3d. 150 Javal, 5s. 6d. 100 Roman Gravels, £13. 100 Carnarvon Cop., 19s. 6d. 20 Leadhills, £2 3s. 9d. 20 So. Devon, £1 15s. 25 Devon Con., £10 1s 3d. 50 Marke Valley, £1 7s. 20 S. Indian Gold, £2 7s. 100 Derwent, £1 10s. 75 North D'eresby, 10s. 10 So. Condurow, £2 9s. 100 East Crebor, 5s. 8d. 200 Nouv. Monde, £1 3s 9d. 60 South Darren, £1 10s. 30 East Caradon, 19s. 50 N. Penhurst, £1 10s. 50 So. E. Wynaad, £1 15s. 20 E. Roman Grav., 17s 8d. 50 Pandora, 16s. 50 Tanker, Gt. Con., 12s. 50 East Van, £1 1/2. 100 Polrose, 16s. 50 Tynwald, 12s 6d. 100 W. Rose, 2s. 6d. 50 Port Phillip, 8s. 3d. 75 United Van Consols and Glyn, 7s. 6d. 50 Frontino, 4s. 7s. 6d. 75 Potosi, 28s. 9d. 100 Prince of Wales, 10s. 100 Ditto, pref., 15s. 6d. 30 Glenrock, £2 6s. 3d. 200 Parys Copper, 20s. 20 West Phoenix, £1 1/2. 50 Glenroy, 8s. 9d. 50 Pestarena, 6s. 9d. 50 Wheal Crebor, 10s. 10 Grogwinion, £2 10s. 30 Ruby, £7 7s. 6d. 20 West Kitty, £5 1/2. 30 Hington Down, £1 1s. 30 Richmond, £1 8s. ** SHaRES SOLD FOR FORWARD DELIVERY ONE, TWO, OR THREE MONTHS ON DEPOSIT OF TWENTY PER CENT. BUSINESS IN CAMBRIAN MINE Shares.

RAILWAYS—SPECIAL BUSINESS.

FOREIGN BONDS—SPECIAL BUSINESS.

AMERICAN STOCKS AND SHARES—SPECIAL BUSINESS. Fortnightly accounts opened on receipt of the usual cover in these and all Stock Exchange Securities.

JAMES H. CROFTS, 1, FINCH LANE, LONDON.

ESTABLISHED 1842.

INDIAN GOLD MINES.—SPECIAL BUSINESS in:—
Cherambadi. Indian Kingston. South-East Wynaad.
Devala Moyar. Indian Phoenix. South Indian Gold.
Devala Central. Indian Trevelyan. Tambracherry.
Great Southern Mysore. Oregum. Wynaad District.
Indian Glenrock. Rhodes Reef. Wynaad Perseverance.

At CLOSE MARKET PRICES, free of commission.
** Reliable information given on any of the above. A daily price list issued giving closing quotations. SPECIAL BUSINESS in Frontino and Bolivia Potosi, Ruby, Nouv. Monde, and Richmond.
** SHaRES IN THE ABOVE INDIAN OR OTHER GOLD AND SILVER MINES SOLD FOR FORWARD DELIVERY ONE, TWO, OR THREE MONTHS ON DEPOSIT OF TWENTY PER CENT.

JAMES H. CROFTS, 1, FINCH LANE, LONDON.

M R. W. H. BUMPUS, STOCK AND SHARE BROKER, AND MINING SHARE DEALER,
44, THREADNEEDLE STREET, LONDON, E.C.
ESTABLISHED 1867.

BUSINESS transacted in STOCK EXCHANGE SECURITIES and MISCELLANEOUS SHARES of every description.
RAILWAYS, BANKS, FOREIGN and COLONIAL BONDS.

TRAMWAYS, TELEGRAPHs, and all the LEADING INVESTMENTS. Accounts opened for the Fortnightly Settlement
A List of Investments free on application.

MR. BUMPUS has SPECIAL BUSINESS in the undermentioned:—
70 Almada, 6s. 3d. 60 East Roman Gravels, 30 New Trumpet, £1 1/2.
25 Arendal, 50 Frontino, £4 7s. 6d. 50 New Pever, 30s.
100 Bodridis, 20s. 20 Great Holway, £5 1/2.
20 Bedford United, 43s 6d. 50 Polrose, 10s., call paid
75 Carnarvon, 19s. 100 Glyn, 10s. 70 Potosi, 28s. 9d.
100 Chontales, 2s. 3d. 70 Grey's Brewery, £3 3/4. 25 Panulillo, £6 1/2.
25 Copiapo, £2 18s. 9d. 5 G-eat Laxey, £1 18s. 25 Pen-yr-Orsedd, 20s.
5 Cupri Copper, £2 44 1/2. 50 Herodfoot, 11s. 6d. 100 Rhodes Reef, £1.
50 Culmo Bis., 18s. 35 Hington Down, 23s 6d. 20 Ruby, £7 7s. 6d.
30 Colorado, 2s. 3d. 100 Indian Glenrock, £7 6s. 15 Richmond, £1 1/2.
100 Devon Friendship, 20s. 50 Indian Phoenix, 30s 6d. 20 Sortridge, 2s. 6d., pm.
15 Devon Consols, £10. 20 Jerusalem, 24s. 25 So. Devon United, 32s.
2 Dolcoath. 75 Kapanga, 5s. 100 So. Indian, £2 16s.
40 Derwent, 32s. 50 Leadhills, £2 1s. 100 Tamar, 17s. 6d.
100 La Plata, 24s. 3d. 70 Tarkerville, 12s. 3d.
60 Lady Ashburton, offer wanted. 50 West Goldolphin, £2.
50 Eberhardt, 17s. 6d. 50 West Polbreen, 30s.
20 Drakewells, 15s. 6d. 100 Wheal Jewell, 14s.
50 Eberhardt, 17s. 6d. 20 Melianear, £4 1/2.
2 East Pool, 15 Mona, £9 4s. 10 Wheal Grenville.
40 Van, 29s. 100 Nouv. Monde, 22s. 6d.

SPECIAL BUSINESS, at close prices, in the SHARES of all the principal HOME and FOREIGN MINES.

Mr. BUMPUS devotes special attention to these Securities, and is in a position to afford reliable information and advice to intending investors and others.

IMPORTANT TO INVESTORS.—The position of the TIN market is steadily improving, and in all probability there will be a considerable advance in the price of this metal very shortly.

Shares in SOUND TIN MINES should, therefore, be bought at present prices, as many of them are likely to have an early and substantial rise.

The following are particularly recommended:—

WHEAL GRENVILLE. NEW TRUMPET CONSOLS.
WEST GODOLPHIN. NEW PEEVOR.
WEST KITTY. WHEAL BOYS.
WHEAL AGAR. NEW KITTY.
WEST POLBREEN. GOODEVERE.

WILLIAM HENRY BUMPUS, SWORN BROKER.
OFFICES: 44, THREADNEEDLE STREET, LONDON, E.C.
ESTABLISHED 1867.

THOMAS B. LAWS, STOCK AND SHARE DEALER, AND MINE ACCOUNTANT,
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JOHN BANTING ROGERS, STOCK AND SHARE DEALER,
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MINING AGENT, STOCK AND SHARE DEALER,
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LONDON, E.C.

HORACE J. TAYLOR, STOCK AND SHARE DEALER
(late of the PORT PHILLIP and VICTORIA [London] MINING COMPANIES, Limited.)

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BUSINESS TRANSACTED IN EVERY DESCRIPTION OF STOCKS AND SHARES.

The following undertakings are recommended:—

BWLCH UNITED, WEST LISBURNE, AND WHEAL COATES.
The two former are Silver-Lode Mines, in Cardiganshire, and the latter a Tin Mine, in the famed St. Agnes district, and a great rise in prices is expected.

BANKERS: THE CENTRAL BANK OF LONDON (Limited).

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MESSRS. PETER WATSON AND CO.,
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OLD BROAD STREET, LONDON, E.C.
BANKERS: THE ALLIANCE BANK (Limited).

MESSRS. PETER WATSON AND CO.'S
BRITISH AND FOREIGN MONTHLY MINING NEWS
—STOCK AND SHARE INVESTMENT NOTES—MINES,
MINERALS, AND METAL MARKETS—SHARE LIST,
No. 831, VOL. XVI., for JUNE month, will be ready next week,
and will be sent to customers on application.

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OF EVERY DESCRIPTION.
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ESTABLISHED 1853.

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WEST CREBOR.
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GREAT POLGOOTH.
PARYS COPPER.
GREAT POLGOOTH UNITED.
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SPECIAL
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GREAT WHEAL POLGOOTH, 15s. pd. MOUNTS BAY CONSOLS.
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Shares in all the LEADING GOLD, TIN, COPPER, and LEAD MINES on BETTER TERMS than those advertised.
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Special Business at close prices in all British, Colonial, and Foreign Mine Shares.
BANKERS: LONDON AND WESTMINSTER.

SPECIAL RECOMMENDATION.—
WEST KITTY MINE.

These shares are now most difficult to obtain even at prices offering by buyers, namely, £4 1/2. Orders to purchase may be left for execution, but cannot be immediately effected. The shares are rising on account of the additional mineral rights acquired, and because of the increased productiveness of the mine. I advise purchase now as strongly as I did when the shares were at 20s. each.

NEW KITTY.

These shares, like West Kitty's 12 months ago, are absurdly cheap. With such prospect as the company has before it they should be purchased immediately. The quotation is £1 1/2 to £1 1/4.

WEST POLBRENN.

Tin has been reached, and the prospects of the property are unquestionably of a high order. I advise the immediate purchase of the shares at present low prices—viz., £1 1/2 to £1 1/4. West Polbreen is almost immediately adjacent to West Kitty, and it is affirmed has the rich West Kitty lode. Sellers of these shares can find a ready market at this office at 26s. each, and buyers will have to pay about 30s. It is reasonable to expect an advance of 400 or 500 per cent.

Information supplied concerning every description of stock, particularly Cornish mines.

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ESTABLISHED 25 YEARS.
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Mr. REYNOLDS refers to his article on page 770.

Pamphlet ready on application.

M R. EDWARD ASHMEAD, 2, DRAPER'S GARDENS, E.C.,
MINING SECRETARY, AUDITOR, AND ACCOUNTANT.

FERDINAND R. KIRK, STOCK BROKER,
5, BIRCHIN-LANE, LONDON, E.C.

Fortnightly Accounts opened in all Stock Exchange Securities on receipt of the usual cover.

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PENNINGTON AND CO., SWORN BROKERS,
3, ROYAL EXCHANGE BUILDING, E.C.,
Transact business in every description of Stocks and Shares.
ESTABLISHED 1860.—BANKERS: ALLIANCE.

TREVINCE CONSOLS
MINE.

We beg to call Special Attention to the Prospectus of this Mine in to-day's Journal. We most strongly recommend the immediate purchase of shares for a great rise in price, or as a bona fide investment.

SPECIAL BUSINESS in Devonport and Tiverton and Grey's Breweries, New Gold Run, Gold Coast, Dingley Dell, and Dieu-Donne shares.

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20 Bedford Unit., 2 1/3 50 Hington Down, 22s 9d 30 Parys Corp., 17s 6d

50 Brazilian Gold, 19s. 6d 50 Indian Glen., £27s. 6d 50 Rhodes Reef, 20s.

20 Biwch United, 50 Indian Phoenix, 40 South Devon, £1 11s. 3d

20 Carr Camborne, £1 12s. 6d 25 South Indian, £3 1 1/2

10 Carnarvon, 19s. 30 Indian Trevelyan, 50 Tamar Silver-Lead,

25 Colorado, 2 1/2. 25 Tamarbrach, £1 14s.

30 Devon Friendship, 20s. 6d 25 Tamarbrach, £1 14s.

75 Don Pedro Gold, 12s. 6d 50 Kit Hill, 22s. 6d. 50 West K. 25s. 6d.

10 Devon Con., £10. 60 Kit Hill, 18s. 9d. 50 West K. 25s. 6d.

20 Devon Gt. Uni., 31s. 60 Lady Ashburton, 21s 6d. 50 West K. 25s. 6d.

50 English Australian, 16s. 6d. 20 Mark Valley, £1 6s. 50 West Phoenix, £1 1/2.

80 Exchequer, 4s. 9d. 10 Mona, 29s. 50 West Lisburne, £5 1/2.

50 Flagstaff, 9s. 3d. 70 Mysore Reef, 17s. 50 Wheal Basset, £5 1/2.

20 Frontino, £2 1/2. 25 Nouveau Monde, 20s. 6d. 20 Wheal Crebor, £4.

100 French Date Coffee, £1 3s. 3d. 50 Pioneer, 21 1/2s. 3d. 40 Wheal Jane, 8s.

20 Gunnis, (Clit.), £

A PROFIT OF SEVERAL MILLION POUNDS STERLING HAS BEEN RETURNED BY THE MINES SURROUNDING THE MONA CONSOLS.

THE MONA CONSOLS COPPER MINING COMPANY

(LIMITED).

Registered under the Companies Acts, 1862 to 1880, whereby the liability of each shareholder is limited to the amount of his shares.

Capital £20,000, in 20,000 Shares of £1 each,

Payable as follows—2s. 6d. per share on application, 2s. 6d. on allotment, and the remainder as required, at intervals of not less than three months, to be paid up on transferring shares.

ALL SHARES PAID UP IN FULL UPON ALLOTMENT WILL BE ALLOWED A DISCOUNT OF FIVE PER CENT.

If no allotment be made the money will be returned.

DIRECTORS.

WILLIAM BROOKES, Esq., Londesboro' Road, Stoke Newington.

WILLIAM PERUANO BUCKHAM, Esq., 12, Laurence Pountney Lane, E.C.

GOLDIE LEIGH HILL, Esq., Goldhawk Road, Notting Hill.

CHRISTOPHER ROBINS, Esq., Cromlech Villa, Burt Ash Lane, Lee, Kent.

(With power to add to their number).

BANKERS.

The BRITISH LINEN COMPANY BANK, 41, Lombard Street, E.C.

SOLICITORS.

Messrs. STACPOOLE and SON, Pinner's Hall, Old Broad Street, E.C.

AUDITORS.

Messrs. JAMES and EDWARDS, Chartered Accountants, 110, Cannon Street, E.C.

CONSULTING ENGINEER.

Capt. T. MITCHELL, Manager of Parys Mines, Amlwch, Anglesea.

BROKERS.

Messrs. WRENN and CO., Crosby Hall Chambers, 24, Bishopsgate Street, London, E.C.

JOHN GASKELL, Esq., 5, Commercial Bank Buildings, Bradford, Yorkshire.

SECRETARY—MR. WILLIAM BATTYE.

OFFICES,—16, GREAT WINCHESTER STREET, E.C.

PROSPECTUS.

This Company has been formed for the purpose of acquiring and developing a very valuable copper mine near Amlwch, in Anglesea, and in the same highly mineralised district from which the celebrated Mona and Parys Mountain Mines have made such large and profitable returns.

The property is highly mineralised, is held under a renewable lease for 21 years, at a low dead rent of £5 per annum, merging into a royalty of 1-20th for copper and other minerals.

The property is traversed for the whole length by three distinctly defined lodes, which have yielded ore assaying as high as 30 per cent. for copper, but beyond the work of ascertaining their richness, and that of the mine generally, no extraction to any great extent has taken place, more than was necessary to actually prove this fact, and the mine may, therefore, be termed virgin, with the unusual advantage of the existence of highly mineralised copper lodes having been determined by trial workings, proved rich and whole to surface.

The situation of the mine is only about two miles distant from the very prosperous mines of Mona and Parys Mountain, and being in the same mineral zone their great success may be taken as an indisputable indication of the results to be looked for from the Mona Consols.

The close proximity of the property to the shipping port of Amlwch affords important facilities for all carriage requirements to and from the mine at a very low cost.

The working of the Mona and Parys Mountain and other mines in the district have already yielded a profit of several million pounds sterling. The following particulars will serve to show the importance of this celebrated district:—

The present monthly returns of copper ore from the Mona Mine are from 300 to 400 tons, besides a very large quantity of bluestone, ochre, &c.; the Parys Mines from 150 to 200 tons of copper ore, independent of large sales of ochres, all of which could be easily doubled directly an advance takes place in the copper market. There is also the Morfa Du Mine, which yields nearly 150 tons of copper and bluestone per month, and from present indications likely to materially improve.

The Parys Mines alone have yielded from time to time more than seven million pounds sterling, and have made the fortunes of many, as the district is so rich in mineral wealth, and only requires capital to develop it.

The mine has been thoroughly examined and reported upon by mining engineers of high standing and ability, who are unanimous in pronouncing it to be a property of great value, the energetic working of which, under proper management, promises to lead to results no less profitable than has already been realised in the other rich copper mines of the district.

The capital of the company will be applied to opening up the mine with the object of making it permanently remunerative, and, with due regard to both speed and economy, without the aid of expensive machinery.

The great copper mines of Anglesea are already recorded in history, and the mineral wealth produced from them at one time controlled the copper markets of the world, and the Directors of the Mona Consols have every confidence in producing a result quite equal to anything hitherto achieved in this famous district.

The Directors are also in treaty, upon very favourable terms, for a valuable piece of mineral property adjoining, which, if successful, will add greatly to the value of the shares of this company.

The shares of the Mona Mine, with £5 paid, are now saleable at about £12 on the Mining Market.

The vendor will accept for his interest in the property the sum of £2000 in cash and £3000 fully paid-up shares.

The only agreement entered into is dated the 16th day of June, 1881, and is between John Campbell of the one part, and William Battye on behalf of the company of the other part, and may be seen, together with the Memorandum and Articles of Association, at the office of the Solicitors of the company.

Prospectuses, with Plans, Reports, and Form of Application for Shares, may be obtained from the Bankers, Solicitors, Brokers, and at the Offices of the Company.

Particular attention is called to the Reports and Specimens of Ore, which can be seen at the Offices of the Company, where every information may also be obtained.

MINING ENGINEERS' REPORTS.

Parys Mines, Anglesea, May 12, 1881.—In accordance with your request, I beg to hand you the following as my report of the above mine, which is situated on the North Coast of Anglesea, and within a distance of two miles from the celebrated Mona and Parys Mountain Mines, which mines have been renowned for their enormous yield of copper ore from time to time, and the great wealth handed over to the fortunate proprietors. The Port-y-wch grant embraces several mines, three of which are very strong lodes running through the entire sett, and copper ore can be seen in various places in the out-crop or backs of these lodes. Very little has yet been done on this property to prove their value, but where a small trial or two have been made some good copper has been extracted, and is believed by practical miners that if these lodes were opened in depth they would prove highly productive. The strata in which these lodes are embedded are similar to the strata in the Mona and Parys Mountain Mines, consisting of chert and bands of clay slate, and the indications are most favourable for the production of copper ore. The lode locally known as the Virgin Lode has been wrought on in the adjoining mine (Tygwyn) on the east, and copper ore of good quality has been mined and sold to the Amlwch Smelting Works. The ore was got in close proximity to the boundary of this sett. These lodes also pass through the Pant-y-gaeg property to the west, and they are of a most promising character, and are likely to become valuable in that section of ground when

further developed. I would remark that the advantages offered for working this property are very great. Access to the mine is rendered easy by means of good roads, and being within two miles of the shipping port of Amlwch, and a similar distance from the railway station and town of Amlwch. There is also a small bay within a quarter of a mile from the mine, where the vessels can be loaded and unloaded with the greatest convenience. I have known this property for a considerable time, and have always entertained a very favourable opinion of it, and can therefore strongly recommend the same for a vigorous working, and I may further add that such chances for opening up a valuable mine are seldom to be met with.

Port Saro, near Amlwch, May 7, 1881.—Having made a careful and thorough inspection of your property, the following is my report thereon. I have been well acquainted with the sett for many years, having been engaged with adjoining mines for a considerable period. There are several masterly lodes traversing the property, and copper can be seen in the backs of them in many places, whilst their formation is everything one can wish for the production of large quantities of mineral. One of the lodes, known as the Virgin lode, is a strong masterly looking lode, which has produced rich copper ore in the adjoining mine, and is whole to surface in your property. The trials already made upon this several lodes, although not a great extent, are sufficient to prove that the property only requires judicious development to attain the same success as the surrounding mines have done. There is one very important feature which must not be lost sight of, and that is the lodes of this district invariably make a shallow depth, and become more compact and richer as depth is attained, so that you will be able to lay open one ground at a very small outlay, without the expense of extensive machinery, and make returns almost immediately. I have, therefore, every confidence in recommending this mine to investors, feeling satisfied that large profits will be realised.

DAVID DAVIES, Practical Miner and Agent.

THE NEW GREAT WHEAL VOR TIN MINING COMPANY (LIMITED).

CAPITAL £100,000,

DIVIDED INTO 100,000 SHARES OF £1 EACH.

2s. 6d. to be paid on application, and 7s. 6d. on allotment the balance of 10s., if required, to be paid in instalments of not more than 2s. 6d. each, and at intervals of not less than three months. It is, however, fully expected that no further calls will be necessary.

70,000 SHARES ONLY TO BE ALLOTTED.

Allotments will be made pro rata.

OFFICES.

1, CROWN COURT, THREADNEEDLE STREET, E.C.

THE

POLBERRO TIN MINING COMPANY

(LIMITED).

Incorporated under the Companies Acts, 1862 to 1880.

Capital £20,000, in 20,000 Shares of £1 each.

Deposit on application 2s. 6d. per share, and on allotment 5s. per share. The remainder in calls of not more than 5s. each, and at intervals of not less than three months.

The deposit will be returned in full if no allotment is made.

DIRECTORS.

DAVID W. BAIN, Esq., Redruth, Cornwall.

Captain WILLIAM BELL McTAGGART, 12, Suffolk Street, Pall Mall, London.

RICHARD TAYLOR, Esq., 6, Queen Street Place, E.C.

ORLANDO WEBB, Esq., Calverton Limes, Stony Stratford.

BANKERS.

The IMPERIAL BANK (LIMITED), 6, Lothbury, London, E.C.

Messrs. BAIN, FIELD, HITCHINS, and CO., Redruth.

MANAGERS.

Messrs. JOHN TAYLOR and SONS.

OFFICES—6, QUEEN STREET PLACE, LONDON, E.C.

ABRIDGED PROSPECTUS.

This company is formed for the purpose of acquiring the extensive and valuable mineral sets known as the Royal Polberro Consols and Weal Primrose, situated in the St. Agnes district, in the County of Cornwall, and for working the various mines comprised within the property.

The Polberro Mines were worked uninterruptedly for many years, during which time large returns of tin ore were made, resulting in the division of handsome profits amongst the shareholders.

The reports of Capt. S. Bennetts, manager of the Penhalls Mine, and Capt. John Gilbert, chief agent of the Mellanear Mine, describe fully the numerous and valuable lodes which pass through the property, and have special reference to their value at the eastern end of the sett, formerly known as Weal Primrose, which adjoins the Penhalls Mine.

From Weal Primrose considerable returns of tin were made some years ago at a depth of not more than 49 fms. below the adit level; and the Penhalls Mine is now paying regular dividends to the proprietors, and presenting a very favourable appearance in the levels which are approaching Wheal Primrose.

In Old Polberro the character of the numerous lodes, along the sides of which innumerable small branches filled with rich ore are met with, is peculiar to the district, and renders them especially suited to the system of tribute, in which manner it is intended to work this mine extensively, with a view to exploring the ground economically, and obtaining from it immediate returns of tin.

It is a well-established fact that the lodes of this district have proved most productive at points where they have formed junctions with one another; and this feature is especially important when, as will be observed from Capt. Gilbert's report, the Pink lode, which is at present being worked with so much success in the Penhalls Mine, will intersect the Polberro great lode a little below the present bottom of the Primrose Mine.

The only agreement entered into is dated the 7th day of June, 1881, and is made between Harriett Taylor, of the one part, and William Gunter Williams, as a trustee for the company, of the other part.

The draft of the leases and the above-named agreement and the Memorandum and Articles of Association can be seen at the offices of the company.

Applications for shares, together with the deposit of 2s. 6d. per share, must be left with the company's bankers, the Imperial Bank (Limited), 6, Lothbury, London, E.C., or Messrs. Bain, Field, Hitchins, and Co., Redruth, or with Messrs. John Taylor and Sons, 6, Queen-street-place, London, E.C.

Prospectuses and the above-named reports, with forms of application for shares, may be obtained at the offices of the company or of either of the bankers.

M R. P. S. HAMILTON (late Chief Commissioner of Mines for the Province of Nova Scotia), PRACTICAL GEOLOGIST, MINING AGENT, and MINING ENGINEER, HALIFAX, NOVA SCOTIA.

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Full details, and all particulars, from

Messrs. H. STOPES & CO.,

No. 24a, Southwark Street, Borough.

It is estimated that the dressing machinery will be completed in three months, when sales of ore can at once commence for dividends; but to cover the chance of any unexpected delay, the vendors guarantee 7½ per cent. interest for the first year, and will deposit shares with the directors to cover the amount.

WHEAL SILVER AND LANTEGLOS

MINES (LIMITED).

Incorporated under the Companies Acts, 1862 to 1880.

* * * The liability of shareholders is strictly limited to £1 per share

FIRST ISSUE OF 10,000 SHARES.

Capital £30,000, in 30,000 Shares of £1 each.

Payments—5s. per share on application and 5s. on allotment. If the remaining 10s. is required calls of 5s. per share will

be made, but not less than six months apart.

Where no allotment is made, the application money will be returned in full.

N.B.—Shares may be paid up in full on allotment if desired. The advantage in doing this is that the dividends will be paid on the amount per share paid, and the fully paid shares will, therefore, receive double to those only 10s. paid.

The vendors sell the properties to the company for £1000 in cash, and 9000 fully paid shares, and agree to pay all expenses up to allotment. There are, therefore, no promotion fees to be paid. Several thousand pounds have been spent in laying open the mines and proving the lodes.

DIRECTORS.

J. BUIST EVANS, Esq., Egerton Lodge, S.W.

Major BEAUMONT, Conduit Street, W.

R. H. ARMIT, Esq., Clifford's Inn, W.C.

*F. CAVE MAITLAND, Esq., M.E., Trehannick, Camelford—

Resident

APPLICATION LIST CLOSES THIS DAY.

SPECIAL FEATURES OF THE BRATSBERG COPPER MINES.

1. The properties are acquired as a going and profitable concern, the operations of the last three years, with only 30 miners and manual labour, having yielded £10,000 profit.
2. The adoption of Boring Machinery and the employment of a larger number of men will at once greatly increase profits. There is house accommodation at the mines for 300 men.
3. The mines are proved to be of great value, and a large quantity of valuable ore ground is available for immediate returns. In only one part of one of the numerous rich lodes the ore is estimated at £220,000. The ore now being raised is the finest ever yet found in the mines. Specimens can be seen at the London office.
4. The property being FREEHOLD there is no royalty to pay, a very great saving compared with other mines.
5. The quality of the copper ore is very rich; the prices realised averaging £12 to £14 per ton, against only an average of £3 7s. 6d. for English ores.
6. Labour is cheap and abundant, and miners do more work per day than in England.
7. The dressing cost is about 8s. 6d. per ton, and the whole cost of the ore from the mines to Swansea is only £2 5s. per ton.
8. There is a fine plant of machinery erected, capable of returning greatly increased quantities of ore.
9. A large number of the shares is already applied for.
10. If no allotment is made the deposit will be returned in full.

THE BRATSBERG COPPER COMPANY, LIMITED.

Incorporated under the Companies Acts, with Limited Liability.

CAPITAL £60,000, IN 30,000 SHARES OF £2 EACH.

Payable with Application, 5s. per Share; payable on Allotment, 5s. per Share; payable on 1st August, 1881, 10s. per Share; payable on 1st October, 1881, 10s. per Share; payable on 1st December, 1881, 10s. per Share. Total, £2 per Share.

DIRECTORS.

HENRY CURRER BRIGGS, Esq., Leeds.

H. W. LAMB, Esq., Director of the Arendal Mining and Smelting and the Devon Friendship Mining Companies.

JAMES MACFARLANE, Esq., Director of the Devon Friendship and Wheal Crebor Mining Companies.

J. H. MURCHISON, Esq., F.R.G.S., Chairman of the Devon Friendship Mining Company.

SAMUEL YORK, Esq., Director of the Arendal Mining and Smelting and the Devon Friendship Mining Companies.

BANKERS—IMPERIAL BANK, LIMITED, London.

BROKERS—Messrs. JOHN GIBBS, HART, AND LANE, 51, Threadneedle Street, and Stock Exchange, E.C.

SOLICITOR—ALEX. KERLY, Esq., 14, Great Winchester Street, E.C.

MANAGERS—Captain JOHN DAW AND SONS.

SECRETARY AND OFFICES—Mr. H. C. MURCHISON, 8, Austin Friars, London.

ABRIDGED PROSPECTUS.

This company is formed to purchase, as a going concern, the extensive and valuable Bratsberg Copper Mines, in Norway.

For the last three years the mines have been in the hands of one lessor, who, with only 30 miners, has returned in that time about 2200 tons of rich copper ore, which have realised nearly £30,000, about one-third of which has been profit, while for 1881 a much larger quantity of ore than last year will be returned. There are now on the dressing-floors 500 tons of 21 to 22 per cent. copper ore.

English mines are subject to royalties, more or less heavy, whereas there will be no such impost on Bratsberg ores, as the property will be held as freehold.

By adopting boring machinery at least three times the quantity of work will be done in the same time as by manual labour, and probably at less expense.

The reports show that on Hoffnung lode alone the ore ground is estimated at only one part of the lode at £222,774.

Below No. 3 adit a shaft has been sunk on a rich course of ore for 30 fms., and there are estimated 110 fathoms in length of very profitable lode in this part of the mine.

At Naesmark, along the back and bottom of the adit lode will produce paying quantities of ore, the copper ore sold having varied from 30 to 40 per cent. of copper, and 60 to 80 ozs. of silver per ton. Some of this ore fetched above £49 per ton.

At Mosnap there is a fine lode containing rich argentiferous blue and yellow copper ore, worth 30/- per fathom. From a small hole on this lode over 500 tons of ore were raised, giving above 30 per cent. for copper and more than 30 ozs. of silver per ton.

At Guldnæs there is a lode 100 ft. wide, having rich blue and yellow copper ore disseminated throughout its whole width.

The back and bottom of the level on Johannes lode will leave a good profit.

Capt. C. Thomas reports:—"At every place opened upon good deposits of copper have been found; but trial levels and cross-cuts have never been extended as they should have been. You should develop the property, and I have no doubt that if this is done it will pay well."

The success of the mines first taken in hand, and the payment of good dividends from them, will probably greatly increase the value of the others, and enable them to be dealt with at considerable advantage for this company and its shareholders.

Captain Daw, who knows these properties better than anyone, confidently states that there need almost be no limit to the quantity of rich ore returned, yielding very large profits, according to the number of men and the machinery employed.

The following extracts from his more recent letters speak for themselves:—

12th April: "I am pleased to inform you these mines are looking splendid.

We are raising a large quantity of rich ore every day, better I never saw." 27th April: "These mines never looked so well since they were called mines as at the present time. The deeper we go the richer the lode is." 4th May: "These mines will pay good dividends." 13th May: "Box of splendours is sent as you requested. I never saw finer specimens in my life." 30th May: "Our mines are looking very well. We shall be sending a much larger quantity of ore to England this year than last. Many tons of our first cargo will produce 30; the remainder from 21 to 22 per cent. for copper—splendid ore."

Looking at the mines being already so rich and productive, it is fair to assume

that with the more rapid development by boring machinery, and the employment of 300 miners, there being accommodation for even a larger number, the profits will be at least ten times as much as hitherto, or £33,000 per annum, equal to 55 per cent. on the whole capital of the company.

The terms fixed for the transfer of all these freehold properties, together with the machinery, plant, buildings, &c., thereon, is £22,500 in cash, and £750 fully paid-up shares, so that the company will have a working capital of about £20,000 which is considerably above the sum estimated to be required for the mines to be now worked.

The only agreements entered into are the following:—

4th February, 1881, between Robert Butterworth of the one part, and John Murchison of the other part. 21st March, 1881, between John Henry Murchison of the one part, and Edward Graham Fisher, as trustee for the company, of the other part.

Copies of the above agreements and of the Memorandum and Articles of Association can be seen at the offices of the solicitor to the company.

It will be observed that Mr. J. H. Murchison, the vendor of the property to the company, is one of the directors. The company will thus have the valuable aid which his long experience in the management of mining properties will enable him to afford.

The number of shares already applied for being large, immediate application for the remainder with remittances of deposit at the rate of 5s. per share should be made and sent to the company's bankers.

Full prospectuses, with reports and forms of application, can be obtained at the office of the company or from the brokers.

THE BRATSBERG COPPER COMPANY, LIMITED.

The APPLICATION LIST for SHARES in this Company will be CLOSED THIS DAY.

8, Austin Friars, 25th June, 1881.

By order,

H. C. MURCHISON, Secretary.

Note.—Applications received by MONDAY Morning's Post will be included in the List.

PROVINCIAL STOCK AND SHARE MARKETS.

CORNISH MINE SHARE MARKET.—Mr. S. J. DAVEY, mine shareholder, Redruth (June 23), writes:—"Our market has been dull during the week, with but very little business doing. Prices of Cook's Kitchen, East Pool, South Frances, and West Kitty have improved; but Phenix United, South Crofty, Pedn-an-drea, and West Frances have declined. To-day transactions are chiefly confined to Carn Brea, Dolcoath, and East Pool. Following are quotations:—Blue Hills, 3 to 3½; Carn Brea, 24 to 24½; Cook's Kitchen, 16½ to 16¾; Dolcoath, 55½ to 56; East Pool, 37½ to 37¾; Killifreth, 5½ to 5¾; Mellaear, 4½ to 5; New Cook's Kitchen, 6 to 6½; New Kitty, 1½ to 1¾; Penhalls, 1½ to 2; Phenix, 4½ to 5; Pedn-an-drea, 3½ to 4; South Condurrow, 9½ to 10; South Crofty, 9½ to 9¾; South Frances, 15½ to 16; Tincroft, 17½ to 17¾; West Frances, 12 to 13; West Kitty, 5 to 5½; West Pever, 15½ to 15¾; West Poldice, 4½ to 5¾; West Seton, 21 to 22; Wheal Agar, 14½ to 14¾; Wheal Bassett, 5 to 5½; Wheal Grenville, 8 to 8½; Wheal Jane, 1½ to 2; Wheal Pever, 18½ to 19; Wheal Kitty, 2 to 2½; Wheal Boys, 2½ to 2¾; Wheal Jane, 2 to 2½; Wheal Uny, 2½ to 2¾; Wheal Boys, 2½ to 2¾; Wheal Pever, 18½ to 19; Wheal Prussia, 1½ to 2; Wheal Uny, 2½ to 2¾; West Basset, 16 to 16½; West Blue Hills, ½ to 1.

—Mr. J. H. REYNOLDS, stock and share broker, Redruth (June 23), writes:—"The share market has been rather inanimate during the week, but prices generally are pretty well maintained. Cook's Kitchens have advanced to 17½, closing rather sellers at this price. Subjoined are the closing prices:—Blue Hills, 2½ to 3; Carn Brea, 24½ to 24¾; Cook's Kitchen, 16½ to 17; Dolcoath, 55½ to 56; East Pool, 37½ to 38; Gunnislake (Clitters), 3½ to 4; Levant, 1½ to 1¾; Marke Valley, 1½ to 1¾; Mellaear, 4½ to 5; New Cook's Kitchen, 6½ to 7; North Herodotus, 10s. to 12s. 6d.; Pedn-an-drea, 3½ to 4; Phenix, 4½ to 5; Penhalls, 1½ to 2; South Caron, 60 to 65; South Condurrow, 9½ to 9¾; South Crofty, 9½ to 10; South Frances, 15½ to 16; Tincroft, 17½ to 17¾; West Frances, 12 to 13; West Kitty, 5 to 5½; West Pever, 15½ to 15¾; West Poldice, 4½ to 5¾; West Seton, 20 to 21; West Kitty, 4½ to 5; Wheal Agar, 14½ to 14¾; Wheal Bassett, 5½ to 5¾; Wheal Boys, 2½ to 2¾; Wheal Grenville, 8 to 8½; Wheal Jane, 5s. to 7s. 6d.; Wheal Pever, 18½ to 19½; Wheal Kitty, 2 to 2½; Wheal Uny, 2½ to 2¾; West Kitty, 5 to 5½; Wheal Prussia, 1½ to 2; Wheal Uny, 2½ to 2¾; West Basset, 16 to 16½; West Blue Hills, ½ to 1.

—Mr. M. W. BAWDEN, Liskeard (June 23), writes:—"The mining market has been steady with but little change or variation in prices during the past week; and most shares are firm in leading mines although they have not advanced in a proportionate amount to the present and prospective price of tin. At Herodsfoot Mine meeting yesterday a call of 2s. per share was made. At West Phoenix Mine meeting held on the mine on Tuesday the accounts showed a debit balance of 2692L 15s. 2d.; a call of 6s. per share was made. Subjoined are the closing quotations:—Bedford United, 2 to 2½; Carn Brea, 24½ to 25; Cook's Kitchen, 16 to 18½; Dolcoath, 55½ to 56; Devon Consols, 10 to 10½; F. & J. Great United, 12 to 12½; Drake Walls, 1 to 1½; East Caron, 7 to 8; East Crebor, 3½ to 4; East Herodsfoot, 1½ to 1¾; East Pool, 37 to 37½; G. & T. Gawton, 1 to 1½; Herodsfoot, 1½ to 1¾; Glasgow Caron, 9½ to 10; Gunnislake (Clitters), 3½ to 4; Herodsfoot, 3½ to 4; H. & C. paid; Hington Down, 1½ to 1¾; Kit Hill, 1 to 1½; Marke Valley, 1½ to 1¾; New West Caron, ½ to ¾; North Herodsfoot, 3½ to 4; Old Gunnislake, ½ to ¾; Phenix United, 5½ to 5¾; Prince of Wales, 2½ to 3; South Crofty, 10½ to 11; South Condurrow, 9½ to 10; South Crebor, ½ to ¾; South Frances, 15½ to 16; South Devon United, 2 to 2½; Tincroft, 18 to 18½; West Basset, 16 to 16½; West Blue Hills, ½ to 1.

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—Mr. JOHN CARTER, mine shareholder, Camborne (June 23), writes:—"There is very little change to notice in our market during the week, and only a limited business has been transacted. West Kitty shares are in better demand at 5s. South Frances improved to 15s. 17s. 6d., but have since declined to 15s. 17s. 6d. Tinsley's prices herewith:—Blue Hills, 2½ to 3½; Carn Brea, 24 to 24½; Cook's Kitchen, 16 to 16½; Dolcoath, 55½ to 56½; East Pool, 37½ to 37¾; Mellaear, 4½ to 5; New Cook's Kitchen, 6 to 6½; North Busy, ½ to 1; Penhalls, 1½ to 1¾; Phenix, 4½ to 5; Pedn-an-drea, 3½ to 4; Santa Gertrude, 17½ to 17½; South Condurrow, 9½ to 9¾; South Caron, 60 to 65; South Crofty, 8½ to 9; South Frances, 15½ to 15¾; Tincroft, 17½ to 17¾; West Basset, 15½ to 16; West Frances, 12 to 12½; West Pever, 15½ to 16; West Poldice, 4½ to 5; West Seton, 20 to 21; Wheal Agar, 14½ to 14¾; Wheal Bassett, 5½ to 5¾; Wheal Boys, 2½ to 2¾; Wheal Grenville, 8 to 8½; Wheal Jane, 5s. to 7s. 6d.; Wheal Pever, 18½ to 19½; Wheal Prussia, 1½ to 2; Wheal Uny, 2½ to 2¾; West Basset, 16 to 16½; West Blue Hills, ½ to 1.

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ave gone up considerably since our last, being now 18 to 18½ prem. **Consett Spanish Ores**; 32s. is now bid for these shares. We think a seller could be found at 32s. 6d. John Abbot & Co.'s shares are offered at 29s. 6d., whilst 35s. is bid. Palmer's Shipbuilding and Iron Co.'s A shares have been done this week at 28s. 6d., which price is still bid. The B shares are wanted at 6½ d., but sellers hold out for 6 d. Skerne Iron shares have been done at 3s., at which they are still offered. Tees Side Iron and Engine Works ordinary shares are 1½ to 2, and preference ½ d. to par. Crookburn Mine shares are offered at 5s., but sellers hold out for 5s. The company are raising fresh capital, with a view to further developing the mine. **Green Hurnt Mine** shares are in strong demand at 6s., whilst only a small lot are offered at 9s. **North Green Hurnt Mine**: 1s. shares are wanted at 1½s., and 2s. paid shares at 12s. 6d. prem., whilst there are sellers at 1½ and 1s. 6d. prem. respectively. **Teesdale Mine** ordinary shares are offered at 7s. and Preference at 10s., without tempting buyers.

SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.

STIRLING.—Mr. J. GRANT MACLEAN, sharebroker and ironbroker (June 23), writes:—During the past week markets have been irregular. Although trade is quiet at present, it is pretty certain the favourable harvests, of which we have now excellent prospects, will make business much brisker this autumn, and, therefore, the tendency of prices is upwards.

In shares of coal, iron, and steel companies the principal movements for the week comprise advances of 10s. per share on Bolckow, Vaughan; 7s. 6d. on ditto (12s. paid); 5s. on Steel Company of Scotland; 1s. 6d. on Glasgow Port Washington; and 1s. on Monklands; but Marbellas are 2s. 9d. lower and Omoa and Cleland 1s. In the Scotch pig-iron market the price of warrants has advanced from 4s. 6d. to 4s. 5d., owing to heavier shipments and furnaces being blown-out at Clyde. Benhara remain about 9s. to 10s. Altami are at 37s. 6d.; Bolckow, Vaughan, 27s. to 28s.; Bilson and Crump Meadow, 5s. 6d.; Cardiff and Swansea Coal, 30s. to 40s.; Chapel House Colliery, 10s. to 12s. 6d.; Chatterley Iron, 6 to 7s.; Chillington Iron, 45s. to 55s.; Clydes Coal, 7s. 6d. to 75s.; Elbow Vale, 3½ to 8½; Heywood Briggs (A), 10 to 11s.; Llynny and Tondu, 5½ to 9s. ditto (pref.), 10s. 6d.; Loftus Colliery, 52s. 6d.; Marbellas Iron Ore, 7s. 6d.; Monkland Iron and Coal, 12s. to 13s.; ditto (pref.), 19s. to 22s.; New Sharston Colliery (pref.), 70s. to 90s.; Omoa and Cleland, 24s.; Onlyn and Dulais Colliery, 28s.; Scottish Australian Mining (new), 17s. 6d. to 22s. 6d.; and Steel Company of Scotland, 10½ to 11s.

In shares of foreign copper and lead concerns there has been a good amount of business doing, especially in Tharsis, which have advanced 1s. 6d. higher on the fully-paid shares; but the new shares are as much as 4s. 17s. 6d. higher on the proposed re-arrangement of the capital. On the other Pan-American, Canadian, and Huntington are all slightly lower. Tharsis shares opened at 41½, and have since improved to 43½, but are now a little easier. Canadian are at 37s. 6d. to 38s.; Huntington, 49s. to 51s.; Linares, 5½ to 6s.; Norway Copper, 5s. to 7s. 6d.; Pierrefonds (pref.), 18s.; Rio Tinto, 20½ to 20½; Yorke Peninsula, 4s. to 6s.; and ditto pref., 15s. to 17s. 6d.

In shares of home mines business continues quiet. Glasgow Cardonan have been done 1s. higher, at 21s. Tin shares are generally better. The meeting of East Roman Gravels is to be on July 6. Blaen Caen are at 20s.; Cwm Prys, 2s. 6d. to 5s.; Drawells, 12s. 6d. to 17s. 6d.; East Chiverton, 20s. to 30s.; East Wheal Rose, 5s. to 7s. 6d. prem.; East Long Rock, 25s. to 30s.; Fortescue, 10s. to 15s.; Great Wheal Polgoon, 12s. 6d. to 17s. 6d.; Great Polgoon United, 15s. to 20s.; Gover Consols, 12s. 6d. to 20s.; Gwydir, 10s.; Gwanton, 17s. 6d. to 20s.; Herodstfoot, 10s. to 12s. 6d.; Indian Queens, 25s. to 35s.; Lady Ashburton, 18s.; Leadhills, 40s. to 50s.; Mount's Bay Consols, 3s. 9d. ditto; North Molton, 6s. 6d.; New Pever, 40s.; New Penrose, 11s. 3d.; North Hendre, 4 to 5s.; Old Shepherds, 2s. 6d. ditto; Patleyn Bridge, 5s.; Parys Copper, 15s. to 17s. 6d.; Pant-y-Mwyn, 15s.; Pandora, 15s. to 20s.; Penhale and Barton, 21s. 3d.; Silver Valley, 4s. 6d.; South D'Esrey, 8s. 9d.; Tresevane, 10s.; Tamar, 17s. 6d. to 18s. 6d.; Tankerville, 10s. to 12s. 6d.; Tin Hills, 22s. 6d.; United Shepherds Wheal Rose, 1s. 9d.; Van Consols and Glyn (ordinary), 6s. to 8s.; ditto (pref.), 14s. to 16s.; Walkham United, 3s. prem.; Wheal Fortune, 60s.; and Wheal Grenville, 7s. to 8s.

In shares of gold and silver mines there has been less business doing, and Richmond have been done at 17 to 17½. An excellent report has been received from the Rio Grande do Sul, and 18 evt. of ore sent home to the mines yielded an average of 64 ozs. to the ton of 20 cwt. Akamkoo are about par; Australasian, 5s.; Cedar Creek, 2s. 6d. to 3s. 9d.; Colar Gold, 2s. 6d. prem.; Central Wynaad, 1s. 3d. ditto to 1s. 3d. prem.; Flagstaff, 7s. 6d. to 10s.; Great Southern of My-sore, 17s. 6d. to 18s. 9d.; Gold Association of Canada, 17s.; Indian Trevellan, 27s. 6d. to 30s.; Indian Mammoth, 5s. ditto to par; Indian Glenrock, 45s. to 47s. 6d.; Indian Phoenix, 27s. 6d. to 30s.; Indian Kington, par to 2s. 6d. prem.; Javali, 3s. to 5s.; Kapanga, 5s. to 7s. 6d.; Mysore Reefs, par; Madras Gold, 2s. 6d. ditto; New Gold Run, 4s. to 6s.; Nouveau Monde, 21s. 3d. to 23s. 9d.; Orogenus, par; Pestarena United, 5s. to 7s. 6d.; ditto, 12½ per cent. preference, 20s. to 25s.; Quartz Hill, 1s. prem.; Tecoma, 3s. 9d. to 6s. 3d.; and West Frontino, 10s. to 15s.

In shares of oil and miscellaneous companies the movements comprise advances of 2s. 6d. per share on Scottish Wagon shares, also Young's Paraffin, 1s. 3d. on Uphalls, and 6d. on Oakbank (new), but Oakbank old shares are reduced 2s. Uphalls advanced from 7½ to 8½, but are now easier. Law's Chemicals, 1s. to 5½.

THARSIS SULPHUR AND COPPER COMPANY (Limited).—At the annual meeting of this company, on Wednesday, the Chairman said notwithstanding the general quietness in trade their volume of business last year had been larger and more profitable; their deliveries of pyrites and production of copper more extensive; and costs diminished in all departments. The extraction of gold and silver by the Claude process was also being successfully carried out. The prices realised for iron ore and copper were rather lower, and sulphur unaltered. Referring to the prospects, he announced the tripartite agreement was renewed for several years with the sulphur at 6d., and they had sold their proportion at this. The deliveries are not likely to fall short of last year's. As regards prices, iron ore was rather lower, but copper, on which their profits mainly depended, showed signs of improvement, owing to falling off in supplies from Chili. A scheme is raised to call up 1s. per share on the 7s. paid shares, and convert them into stock. The company propose to give all shareholders option of having their shares made payable to bearer, and are also considering the propriety of reducing the shares from 10s. each to some smaller figure, so as to bring them within the reach of small investors.

EDINBURGH.—Messrs. THOMAS MILLER and SONS, stock and share-brokers, Princes-street (June 23), write:—The railway market has been quiet during the past week, and prices generally have not changed much. Great Northern of Scotland, however, have receded from 66 to 63½ and Brighton Deferred from 137½ to 135½. Preference guarantees and debenture stocks have maintained their prices. Canadian railways have had a heavy fall, owing to the lowering of rates. The last prices show a recovery from the lowest point. American railways have had a rise to-day on improved New York prices. In banks, Clydesdale has declined 1s. to 22s.; and National has risen, 1s. to 27s. Standard Life Insurance have risen from 7s. 16d. to 7s. 17d. Clyde Coal from 7s. to 7s. 6d. Oakbank Oil have declined from 39s. to 38s., and Uphall Oil have risen from 8s to 8½.

IRISH MINING AND MISCELLANEOUS COMPANIES' SHARE MARKET.

DUBLIN.—June 23.—There has been a little more business this week in mine shares. Berehaven have been freely dealt in at 6s. 3d., but have since receded to 6s., and there have been some transactions in Wicklow at improved prices. Killaloe slate are quoted 9s. 6d. per share at present and have been done from 6d. to 1s. higher. Mining prospects appear to be somewhat improving.

CORK.—Messrs. J. H. CARROLL and SONS, stock and share brokers, South Mall (June 22), write:—Markets continue steady. Great Southern have advanced to 112, and Midland were bought at 85. Wicklows are 82½. No change in Bandons or Passages. National Bank done at 69, and Munsters at 7½. Provincial are 61½, and Hibernians 43½. Cork Steam Packets remain 12½, and Gouldings 9. Levy's are 43, and Gas shares 7. Lyons fully-paid shares were done at 6, and Harbour Board debentures 102½ per cent.

COLORADO MORTGAGE AND INVESTMENT COMPANY OF LONDON Limited.—The directors have resolved to recommend a dividend from the profits of the year ended May 15 last at the rate of 10 per cent., and 5 per cent. bonus, making the distribution for the year 15 per cent.

ELECTRIC WRITING COMPANY (Limited).—A petition has been presented and an order made for the winding up of this company. Mr. Chitty, Q.C., and Mr. Oswald supported the petition; and Mr. Ince, Q.C., and Mr. Lemon, on behalf of the company, consented to the order asked for.

INDIAN MAMMOTH GOLD MINES COMPANY (Limited).—A petition has been presented for the winding up of this company, and the usual compulsory order made. Mr. Chitty, Q.C., and Mr. Russell Roberts were for the petitioner, and Mr. A. C. Eddis was for the company.

SKEGBY COLLIERY, LIME, AND BRICK COMPANY (Limited).—An order has been made for the winding up of this company under the supervision of the court. Mr. Romer, Q.C., Mr. Bush, and Mr. Grosvenor Woods were the counsel appearing.

RUSSIA COPPER COMPANY (Limited).—This was a winding up which had stood over for the reconstruction of the company. It was stated that a scheme had been arranged, and directions were now given by the court for meetings to be called at which the liquidator should preside. Mr. Whitehorn, Q.C., and Mr. Rashleigh were the counsel appearing.

TELEPHONE & TELEGRAPH.—At the Mersey Docks Board meeting on Thursday it was stated that the long controversy as to the right of using telephones over the dock estate as opposed to telegraphs had been at last decided by the Court of Queen's Bench, which ruled that the two wires were practically identical. Henceforth, therefore, parties using telephones would be accountable to the Post Office.

Messrs. PENNINGTON AND CO., SWORN BROKERS, 3, ROYAL EXCHANGE BUILDINGS, LONDON, E.C., having had TWO THOUSAND SHARES in this (TREVENCE CONSOLS MINE) placed in their hands FOR DISPOSAL at 22s. 6d. per share, are prepared to receive application for any portion of same on the following terms:—10s. per share on application, and balance as required, in sums not exceeding 5s. per share, and at not less than one month's notice.

IT IS UNDERSTOOD THAT THE WHOLE AMOUNT REALISED BY SAID SALE WILL BE EXPENDED IN MACHINERY AND WORKING THE MINE.

The company is managed strictly on the NO CREDIT SYSTEM—every account being charged and paid monthly.

Having lately (together with several eminent mining authorities) inspected the property, we have no hesitation in stating that (for the depth) it is the best mine in Cornwall at the present time. We have every confidence in recommending the purchase of these shares not only for a rapid rise in price, but as a *bona fide* investment.

SPECIAL ATTENTION IS CALLED TO THIS IMPORTANT PIECE OF RICH MINERAL GROUND:—

1st.—That the north part immediately adjoining this has paid £1,200,000 in dividends, and Wheal Moor, one of the mines included in the above (and was immensely rich), is now a part of this grant, and large quantities of tin and copper can be taken away at once.

2nd.—That Tresavean lodes, which paid £800,000 in dividends, are in the entire length of this property.

3rd.—That it is estimated, judging from the important discoveries already made, in 12 months substantial dividends will be declared.

Trevence Consols Mine (TIN AND COPPER).

DIVIDED INTO 12,000 PARTS OR SHARES.

Situated in the celebrated Mining Parish of GWENNAP, CORNWALL, from which has been raised as much, and probably more, mineral than any other Parish in the County, which may be estimated at many millions sterling.

PURSER—Mr. JOHN HENRY MAYNE (of East Pool Mine), St. Day, Scorrier, Cornwall.

AUDITOR—Mr. JAMES TREGONING, Auditor of Dolcoath Mine, and Actuary of Redruth Savings Bank, &c., &c.

BANKERS—CORNISH BANK (Limited), Redruth, Cornwall.

This mine is being worked on the Cost-Book principle, which is better than any Limited Liability Act that could be framed for working Cornish mines, and seeing that the whole of the following immensely rich and productive mines in this parish were worked on the Cost-Book principle it must be a conclusive fact that it is the very essence upon which Cornish mines should be worked to be remunerative, viz.:—

Tresavean lodes (which pass through this grant) the late Mr. William Francis records in his History of Gwennap as having paid in dividends over £800,000. Penstruthal Mine paid as much as £17,500 in two months' working. Paid in dividends... 130,000. Wheal Beauchamp... ditto... 130,000. Trethellan Mine... ditto... 48,441. Treviskey Mine... ditto... 37,920.

(These mines are on the west.) £1,146,361

The neighbouring mines on parallel lodes to north are—

The group of mines including Old Ale and Cakes, Poldory, Wheal Moor, Sunny Corner, Wheal Todd, Consols and Clifford, are all adjoining sets with this (Trevence Consols) ... Paid in dividends... £1,200,000.

The surrounding mines in the same parish and district include—

Wheal Jewell	... Paid in dividends...	409,000
Wheal Unity	... ditto...	390,000
Treskerby	... ditto...	200,000
Poldice	... ditto...	200,000
Wheal Damself	... ditto...	180,000
Wheal Gorland	... ditto...	150,000
Carharrack	... ditto...	80,000
Ting-Tang	... ditto...	50,000

Total paid in dividends... £3,996,361

It is also very gratifying to know that East Pool Mine, the richest mine in the county at present (with which the purser is connected, and has been for 13½ years), is worked upon the Cost-Book Principle, also Dolcoath, Tincroft, Carn Brea, Wheal Agar, and the whole range of mines in that district—the richest tin-producing district in the world at present.

The discoveries that have been made in Trevence Consols are most valuable, and it is confidently believed by a little deeper development will realise one of the richest mines ever opened up in Cornwall.

The sett is extensive, being about 360 fms. long, and 360 fms. wide, and traversed by lodes of great historic repute, which have been so productive in the neighbouring mines.

The lodes are of regular and well-defined character, showing great mineral strength. The engine-shaft has been sunk about 15 fms. from surface, at which depth a level has been driven north and south from the shaft, and in the former a lode has been cut, which is from 4 to 5 ft. wide, and worth £12 per fathom, and presenting, altogether, evidence such as is unmistakable in Gwennap of there being a large body of rich copper ore at but little depth below the present workings; and it is confidently relied on that the most sanguine expectations will be realised. The copper ore broken from this lode is to be seen at surface, and returns can be made at once from this ore ground after the engine is at work.

Further west, about 60 fms., another shaft has been sunk about 5 fms., which has laid open a lode worth £15 per fathom. This is much talked about by the miners of the district, because it is precisely the same in character as was produced by the lodes of the neighbouring rich mines at a similar depth; more particularly Wheal Buller, which paid 220,000/- in dividends in 10 years. The high character of this lode fully justifies the opinion that before the shaft is many fathoms deeper it will open up a great course of rich copper ore. Should the north level be driven about 9 fms. further, and the lode cut productive (which is 10 fms. deeper), a course of ore from shaft about 60 fms. long and 10 fms. high (making altogether 600 fms. of ore ground) will be laid open at once.

MIDDLE SHAFT.—This shaft is sunk about 10 fms. on the course of the lode, which is 6 ft. wide (splendid lode), composed of copper, mundic, &c., and improving; in about 10 fms. deeper another lode to the south of this (highly mineralised), from its present underlie, will form a junction, when it is expected a large course of copper ore will be discovered.

NEW SHAFT.—This shaft is down about 13 fms. from surface. In the 10 there is a lode producing 6 tons of copper, mundic, &c., per fathom, east and west.

In cross-cutting about 5 fms. north from this shaft, one of Wheal Moor lodes has been cut, worth from £12 to £15 per fathom, and improving. This is a most important discovery.

OLD SHAFT.—About 9 fms. north of the new shaft, down about 4½ fms. from surface, is a lode worth 10/- per fathom. A cross-cut is now being driven from the new shaft to cut this lode; it is expected this will be accomplished in a few days. If good, of which there is no doubt, there will be another additional discovery for the length of the sett.

Two other lodes, composed of copper, mundic, tin, &c., have been discovered.

The same cross-courses that are in the adjoining mines are in this mine; it is also traversed by two large elvan courses over 40 ft. wide each.

The importance of these most valuable discoveries cannot be too highly estimated; and looking at the fact that the mine has already opened up so productively, and that the district is so proverbial for shallow and deep courses of tin and copper ores (it is believed the ground is teeming with mineral), that it will be one of the greatest and best mines that the district ever produced.

In addition to these discoveries there are also three other lodes in Wheal Moor part of the grant, from which immense quantities of tin, copper, and mundic can be taken away almost at once remuneratively.

The mine, which is held under a lease for 21 years, at the low royalty of 1-24th and 1-30th, has been inspected by Capt. Maynard, of East Pool Mine, Capt. White, of Wheal Pever, Capt. Prisk, of South Wheal Francis for many years, and now of Whe

CARNARVONSHIRE GREAT CONSOLS LEAD MINING COMPANY (Limited).—Capital 75,000*l.*, in shares of 2*l.* To acquire and undertake the assets and liabilities of the Llanrwst Lead Mining Company (Limited), and to carry on the business of miners, smelters, metallurgists, and quarry owners. To buy and sell, refine, and deal in metals, ores, minerals, and mineral substances and compounds of all kinds, and generally to carry on all operations incidental to that of a lead mining company. The subscribers (who take one share each) are—C. H. Fall, Leytonstone, esquire; W. H. Pym, 3, Percy Circus, accountant; H. D. Parsons, 81, Bishopsgate-street Within, clerk; J. J. Arnott, Kingsland, clerk; A. Endean, 85, Gracechurch-street, sharedealer; C. B. Smith, 3, Cloth Fair, accountant; A. W. Gregory, Hornsey, valuer. A director's qualification is fixed at 100*l.* The number must not be less than three or more than six.

THE FOREIGN MINING ASSOCIATION (Limited).—Capital 5000*l.*, in shares of 1*l.* The acquisition, developing, working, selling, or otherwise disposing of mining and other property and interests abroad, and the extracting, smelting, refining, or otherwise treating minerals or other substances. The subscribers (who take one share each) are—T. S. Griesbach, Hornsey, land agent; W. M. Gow, 167, Piccadilly, accountant; C. H. Hoare, 20, Wansey-street, clerk; A. S. Body, Battersea, clerk; D. B. Lindsay, Brixton, secretary; J. Milne, 11, Queen Victoria-street, accountant; A. H. Baily, jun., 3, Royal Exchange Buildings, printer. Qualification 100*l.*

THE ORION DIAMOND MINING COMPANY (Limited).—Capital, £250,000, in shares of £10. To acquire by purchase 45 land claims situate at Du Toit's Pan, Griqualand West, South Africa, according to the terms of an agreement entered into, together with the plant, houses, utensils, machinery, and other effects, for the purpose of carrying on all operations connected with diamond mining and the searching for precious stones. The subscribers (who take one share each) are—J. Mosenthal, 5, Cophall Buildings, merchant; H. Mosenthal, 5, Cophall Buildings, merchant; A. Dünkelbühler, 97, Hatton Garden, merchant; S. W. Paddon, Union Bank Chambers, merchant; J. W. Solomon, 5, Cophall Buildings, merchant; W. Ford, Addiscombe, buyer; R. Hosch, 5 Cophall Buildings, clerk.

THE COLLIERIES COMPANY (Limited).—Capital 100,000*l.*, in shares of 5*l.* To purchase or otherwise acquire certain coal mines and beds of fireclay and mineral lands situate in the parish of Winlaton, county of Durham, known as the Blaydon Main Colliery, with all effects belonging thereto, working and developing said property, and carrying on the business of a colliery owner in all branches. The subscribers (who take one share each) are—J. W. Kincaid, South Kensington, merchant, 50; J. T. Ramsay, Newcastle-on-Tyne, colliery owner, 1; G. R. Ramsay, Newcastle-on-Tyne, manager, 1; S. S. Malcolm, Kingswear, merchant, 400; A. Forsyth, 27, Leadenhall-street, gentleman, 150; J. Ogle, 84, Lombard-street, merchant, 200; G. Sichel, 153, Abbey-road, gentleman, 400.

THE FLINTSHIRE AMALGAMATED SILVER-LEAD MINES (Limited).—Capital 50,000*l.*, in shares of 1*l.* To purchase or otherwise acquire lands, mines, and mineral properties, or rights and interests in same, in the county of Flint, or elsewhere. To work, explore, develop, and maintain the mines, minerals, or other properties thus acquired by the company, and to carry on generally the business of a mining, smelting, trading, and metallurgical company in all its branches. The subscribers (who take one share each) are—W. Richardson, Cheetham, agent; H. Cadman, Urmston, manager; W. Whitehead, Openshaw, agent; W. H. Whalley, Rusholme, agent; A. L. Leech, Manchester, agent; W. H. Brookes, Openshaw, traveller; R. H. B. Redford, Maida Vale, secretary. The subscribers to appoint the first directors. A fee of 4*l.* will be paid for each attendance at the board. The number of directors must not exceed nine, or be less than three.

THE CHILE GOLD MINING COMPANY.

Although the Venezuelan mines have been but comparatively few years familiar to British capitalists the results which have been already obtained from them are sufficient to make them attractive. It is but a short time since that the Potosi was placed upon the market and had a reception which has seldom been given to a mining enterprise—the reason no doubt being that the intrinsic worth of the property was fully recognised. In the last page of to-day's Journal an equally valuable property is announced in the same region and brought forward under equally favourable auspices. The Chile Gold Mining Company has a capital of 500,000*l.* in shares of 1*l.* each; but of these 165,000 have been allotted to the vendors and 125,000 are applied for and will be allotted in full, so that only 210,000 remain to be placed—a number which with the reputation Venezuela at present enjoys will, it is believed, be quickly disposed of.

The property to be acquired, and for which 425,000*l.* is to be paid, leaving the very ample working capital of 75,000*l.*, embraces the well-known Mocupia Estate and Chile Gold Mine, situate in the State of Guayana, Venezuela, and held under grants from the Government for a term of 50 years (of which 44 years are still unexpired), renewable for a further period of 50 years. The property comprises an area of about 650 acres, and contains the greater portion, so far as developed, of the noted Chile Gold Lode. The surface is principally covered with wood, which is available for mining purposes, and for fuel. Several auriferous quartz veins run through the estate, but the proved extent and richness of the Chile lode has hitherto induced the proprietors to confine their attention solely to its development. The directors of this company also propose to limit the operations to this vein, and at a later period to sell or lease the remaining gold lodes comprised in the property.

It would be difficult to find a better authority upon the mines of this district than Mr. George Attwood, whose position as manager of the adjoining Potosi Mine must have given him every facility for acquiring a complete knowledge of the various veins and properties. He gives an interesting table, which shows that from 74*l* 2*oz.* of gold in 1871 the quantity annually increased, until in 1880 it reached 14,525*l* 2*oz.*, the quality of the quartz regularly and gradually improving during the same period from $\frac{1}{2}$ oz to the ton to $\frac{1}{2}$ oz. to the ton, and he mentions that during the past 10 years about 300,000*l.* have been expended in acquiring and developing the Chile property and demonstrating its value. The table referred to proves how regularly the vein has improved in richness as depth increases, and Mr. March, who has managed the mine for seven years, estimates the future yield of gold at from $2\frac{1}{2}$ to $3\frac{1}{2}$ ozs. per ton of quartz.

Mr. Attwood fully shares Mr. March's views in this respect, and states that his opinion is further confirmed by the results obtained from the small portion of the Chile vein worked by the Potosi Company, between the old and the engine shafts of the Chile Mine. Mr. Provis, engineer to that company, states in his report, dated Oct. 2, 1880, that the quartz from the Chile vein had produced on an average during the preceding 12 months 3 ozs. of gold per ton, and was still improving, the last month's return having reached 3*l* 2*oz.* per ton. Moreover, the section of the Chile vein worked by the Potosi Company here referred to, and from which they extracted 52,338 ozs. of gold, value 200,676*l.*, during the 3*l* years ending Sept., 1880.

As to the results to be anticipated, Mr. Attwood says that, taking the total expenditure at the mines and in London at five times the amount of the greatest cost ever incurred when running 20 stamps (700 ozs. per month), the total monthly expenditure would amount to 3500 ozs., leaving a profit balance of 5125 ozs. melted gold, or 19,751*l.* per month—equal to a profit of 236,772*l.* per annum. He estimates that, from July 1 of the present year, the company will be able to earn a net profit in twelve months of 53,055*l.*, or upwards of 10 per cent. upon the capital of the company. By July 1, 1882, he estimates that the proposed additional machinery will have been erected and brought into full operation, from which period a profit of at least 200,000*l.* per annum should be realised.

PANAMA CANAL.—Under the title of Additional Notes on the Isthmus of Panama, Capt. George Peacock, F.R.G.S., of Starcross, published on June 9—"his 76th birthday"—in which he gives a quotation from a statement of Samuel de Champlain, the founder of Quebec, written in 1599, in which, after observing that all the gold and silver from Peru comes by way of Panama, Champlain says:—"L'on peut juger que ces quatres lieues de terre qu'il y a de Panama à cette rivière estoient coupées, l'en pourroit venir de la mer

du su en celle deçà, et par ainsy l'on accourcirait le chemin de plus de 1500 lieues," and he adds that since from Panama to the Straits of Magellan would be one isle, and from Panama to the Terres neuves another isle, America would be in two islands. Captain Peacock gives the test of a handsome diploma of honour, with a decorative State ribbon and a silver medal, which he has received from the Colombian Government for his surveys and explorations of the Isthmus of Panama in 1831, 1832, and 1842. The whole pamphlet is well worth perusal, and contains a large amount of information.

THE VAN MINES—MONTHLY REPORT.

June 22.—As under, please find my monthly report on this mine. In the 120 west I am glad to be able to report that the end looks more encouraging than I have seen it for a long time. We have a very kindly lode, producing a little lead, and on the footwall we have a fine rib of carbonate of lime, and a very strong stream of water, so that we think with such indications we shall ere long make a good discovery here. These indications have not yet failed in this mine. In the 105 east we are still driving upon a strong lode, very virgin, and producing chiefly blende. In the rise in back of the 105 west we appear to have got hold of the ore ground. The rise is up 4 fms., and is now worth for lead about 23 cwt. per cubic fathom. The stopes in back of the 105 west, three in number, are worth on the average 33 cwt. of lead ore per cubic fathom; average width, 18*l* 1*ft*. The stopes in back of the 90, east and west of shaft, are on the average 17*ft*. wide, and are worth 1 ton of lead ore per cubic fathom. The stopes in back of the 75, eight in number, are on the average 21*l* 1*ft*. wide, and worth 32 cwt. of lead ore per cubic fathom. The two stopes in back of the 60 west are 18*ft*. wide, worth 2 tons of lead ore per cubic fathom. The stopes in back of the 60 east is 7*ft*. wide, worth 22 cwt. of lead ore per cubic fathom. The stopes in back of the 60 is driven east of shaft 130 fms.; we have yet about 49 fms. to reach the line of the wince where the lead was first seen in the old workings, but it is quite possible that we may make a discovery before reaching that point. The forebreast is spotted through-out with small specks of lead, which we consider a very favourable indication.

Van Hill.—In consequence of deficient ventilation, I have removed the men from the north lode cross-cut (at Van) to make a few trials at Van Hill. They will be able to commence driving a short trial cross-cut in the lower adit in a day or two. They have a little work in clearing away falls and doing some repairs to the timbering. In a few days we shall set a part of me to commence sinking a wince in the bottom of the 105 west, in advance of the 120, in order to ventilate that level. Surface: Everything at surface is going on regularly; machinery are all kept in working order. Everything is looking well. Our four-weekly sale takes place to-morrow upon 200 tons of lead and 100 tons of blende. The following are the bargains set for the ensuing two months:—The 120 west to 4 men, at 100*l.* per fathom; the 105 east to 2 men, at 100*l.*; the rise in back of the 105 west to 4 men, at 80*l.*; the 150 stop in back of the 105 west to 4 men, at 55*l.*; the 100 ditto to 8 men, at 52*l*; the 60 ditto to 8 men, at 52*l*; the 60 stop in back of the 90 as under: The 20 west to 8 men, at 50*l.* per fathom; the 40 west to 8 men, at 70*l*; the 60 west to 8 men, at 77*l*; the 80 west to 8 men, at 62*l*; the 140 west to 8 men, at 50*l*. The stopes in back of the 75 as under: The 20 east to 8 men, at 65*l*. per fathom; the 20 west to 8 men, at 50*l*; the 40 west to 8 men, at 47*l*; the 60 west to 8 men, at 47*l*; the 80 west to 8 men, at 50*l*; the 100 west to 8 men, at 50*l*; the 120 west to 8 men, at 45*l*; the 150 west to 8 men, at 65*l*. The 60 permanent level is set to 4 men, at 95*l*. per fathom. The two stopes in the back of the 60 west are set to 8 men in each, at 77*l*, 6*l*. per fathom. The eastern stop is set to 6 men, at 80*l*. per fathom. The Van Hill cross-cut is set to 2 men, at 90*l*. per fathom.—W. H. WILLIAMS.

SORTRIDGE—SPECIAL REPORT.

Cook's Kitchen Mine (Camborne), June 21.—I have carefully inspected Sortridge Mine, as requested, and beg to hand the following report:—The sett is an extensive one, being about 500 fms. long on the course of the lodes, and is well supplied with surface water for all purposes. The mine was formerly worked to a depth of 90 fms. below the adit, or 140 fms. from surface, but the water is now up to the adit level. The old workings were confined to that portion of the Copper Lode laying between North Robert Mine and the cross-course, a distance of 80 fms., and from this piece of ground some 60,000*l.* worth of copper was sold. In endeavouring to find the lode on the other (western) side of the cross-course the old company drove their levels too far north, and failed to discover the lode. Recently, it has been ascertained by sinking a new shaft from surface, about 15 fms. west of the cross-course, to a depth of 6 fms., that the cross-course did not leave the lode as was formerly supposed, but simply disordered it. The back of the lode is now laid open in the new shaft and presents a very promising appearance, being about 6*ft*. wide, and composed of gossan, quartz, and munder, with stains of black copper ore. I should recommend that the 40*ft*. level from surface be driven (after careful dialling) through the cross-course to intersect the copper lode at that depth. This can be easily done, as the lode is now opened upon in the new shaft, and the cost will be small. I see no reason, looking at the large returns of copper in the eastern side of the cross-course, why the lode should not prove equally rich on the western side.—The Tin Lode lays north of, and probably forms a junction with, the copper lode westwards. About 160 fms. west of the cross-course a new shaft is being sunk, which is now 6*ft*. from surface. The lode in the bottom of the shaft is 4*ft* or 5*ft*. wide. I very carefully took samples from a pile of tinstuff (about 6 tons) broken from this point, and found it to yield 48 lbs. of tin per ton. A few pits were sunk on this lode in the eastern part of the mine a century or more ago, but nothing has been done in this part of the sett. Judging from the general character of the lode and its geological position, I am of opinion that when properly developed it can be worked at a good profit. I should recommend that an adit be brought up on the lode from the base of the hill, as this will give a piece of ground several hundred fathoms in length, and varying from about 20 to 50 fms. high. This could be very cheaply worked, as no steam power either for pumping or hauling would be required. I consider that your prospects at Sortridge are very good, and with a vigorous prosecution of both tin and copper lodes I believe you will have a good and permanently remunerative mine. There are other known lodes standing to the south of the tin and copper lodes, but very little has been done upon them. I should for the present confine operations to the tin and copper lodes reported on above.—CHAS. THOMAS.

WHEAL GOLDEN AND EAST WHEAL GOLDEN MINES (Perranzabuloe, Cornwall).—These mines, which immediately adjoin the Perran Silver-Lead Consols, are about to be worked by a company with ample capital to develop the property. When the mines were stopped in 1856, owing to inadequate machinery both for winding and pumping, they were producing only 60 tons of rich silver-lead per month, but required a moderate expenditure of capital and good machinery to double or even treble that production. This refers only to the Wheal Golden Mine, which has already been sunk to the 127, and was producing 3 tons of silver-lead per fathom in the shaft when stopped, and shallower levels had gone through a continuous course of ore, worth 40*l.* per fathom, for over 40 fathoms in length. The East Wheal Golden, in which the late Sir Frederic Williams at his death was largely interested, and which was only stopped in consequence of that event, is a most promising property, very much richer in silver than either Wheal Golden or Perran Consols. A moderate expenditure of capital is required to make this portion of the property equally as productive as the Wheal Golden, and the two properties being proposed to be worked together will save great expense in management, &c.

WEST CARADON.—This mine has much improved since the general meeting of the adventurers, held on the 17th inst., when the various points of operation were valued by the agent as worth, in the aggregate, 7 tons of copper ore per fathom. The agent now values them at 10 tons of ore per fathom.

NEW WEST CARADON.—A considerable improvement has taken place in the 42 fm. level on the main lode, which is now worth 2 tons of copper ore per fathom. At this point there is said to be a run of 150 fms. of wholly untried ground upon the lode, which was never seen under the former working.

PERRAN SILVER-LEAD CONSOLS (Perranzabuloe, Cornwall).—Mr. William Ellison, the chairman of the company, accompanied by Mr. Makepeace, the secretary, visited these mines on Monday, and were much gratified at the progress which, under Captain Richard Pryor's management, has been made, notwithstanding the great severity of the winter, which for so long a period rendered the transit of the heavy machinery quite impossible. A 60-inch cylinder steam-engine has been erected, and will be ready to commence pumping out the water in about ten days time, as the 18-inch lifts of pumps are standing intact from the adit level to the 117 fathom level. A 20-inch cylinder winding engine has been erected, and Messrs. Harvey and Co. are supplying a steam capstan engine and two 12-inch cylinders. It is expected that early in August the water will be forked, when the reserves which were left in the mine on the back and euds of the 117 fathom level, north and south of the engine-shaft, can be at once rendered available, and as the lode in the engine-shaft was producing 3 tons of lead per fathom, operations will be at once resumed in sinking so as to open out the deeper and richer ground. These ores, averaging about 25 ozs. of lead per ton, largely increase the selling value.

NEW KITTY.—We are officially informed that the difficulty in clearing the New Kitty shaft has been very great, the stuff being so compact with which the mine was filled. However, the utmost dispatch has been made, and it is anticipated that the bottom of the shaft will be reached before three weeks hence, when no doubt

much light will be thrown on the company's prospects. The greatest energy and economy is observed in all departments.

BRATSBERG COPPER MINES.—A letter has to-day been received from Captain Daw, at the mines, in which he says:—"I am pleased to inform you we have a good improvement in what is called No. 2, which is our furthest end west. The lode is now over 2 ft. wide, composed of quartz and rich copper ore, opening up splendid stopeing ground. In fact, you will be surprised when you come out to see what a mine we have." We need make no comment on this, beyond remarking that we have no doubt the greatly extended operations about to be carried on by the company just formed will lead to many such, and even richer, discoveries.

BRAZILIAN GOLD MINES.—At the annual general meeting of shareholders, reported elsewhere, satisfactory information was submitted. The advices just to hand show that various important improvements have taken place in several of the mines. In the Descoberta the lode has increased to no less than 40 ft. in width. The manager says that "the whole of the drift is being saved for future treatment, producing a uniform sample of gold." Shareholders will recollect that the Descoberta mines contain three lodes, which had proved very rich for gold—20 lbs. of stone producing upwards of 100 oztavas of gold. It is in order these rich old workings two of these lodes have formed a junction, now 40 ft. wide, producing a uniform sample of gold. The prospective importance of this discovery cannot be over-estimated. The Matta Matta vein has also improved, being 5 ft. wide, thickly charged with pyrites—a most favourable indication—carrying samples of gold. The other mines are progressing well. The Jacutinga section continues to yield gold in several of the "lines," indicating the nearness of rich deposits. With ample capital at command, these mines are likely to prove a great prize.

THE SMOKE NUISANCE.—An Exhibition of Heating and Smoke Preventing Appliances will be held under the auspices of a joint committee of the Kyrle and National Health Societies, at South Kensington, on Oct. 24, closing on Nov. 26. The public need for this exhibition has caused a great number of new patents to be taken out for improvements in the lighting and heating art, and there are evident indications of a change from the old and barbarous state of things, which has already caused so much waste and discomfort to the community. The exhibition has the honour of being presided over by his Royal Highness Prince Leopold, Duke of Albany, K.G., and by the Duke of Westminster, K.G., and the administration is in the hands of an influential executive committee. The arcades of the Royal Horticultural Society and some of the galleries belonging to the Royal Commissioners of 1851 have been lent for the purposes of the exhibition. Numerous medals and prizes in money will be awarded to the inventors of the best appliances for the prevention of smoke from boiler furnaces, ranges, and domestic grates—as also for improved fuels for household and manufacturers' use. Many applications for space have been received in advance of the particulars of the exhibition, and intending applicants should apply before June 30 to Mr. G. R. Redgrave, Works Office, South Kensington Museum. At the exhibition trials of apparatus will be made and reported upon, and popular lectures will be delivered by various scientific authorities on the subject of heat, fuel, &c., in furtherance of this important movement. It may be mentioned that the better utilisation and selection of coals, especially for the use of large towns, would be of advantage both to the public and to colliery proprietors generally.

THE AURIFEROUS BLACK SAND OF COUNTY WICKLOW.—At the Royal Dublin Society, on Monday, Prof. W. R. McNaughton, M.D., F.R.S., presiding, Mr. Gerard A. Kinahan read a "Note on the Occurrence of Black Sand in the Drift North of Greystones, County Wicklow." Mr. Kinahan stated that this auriferous sand accumulated at the base of the cliffs north of Greystones during the heavy gales last autumn, its occurrence then being due to the wasting away of the cliff during storms, it being widely disseminated through this drift. It is composed principally of magnetic iron, chroic iron, and garnets, but contains numerous fine grains of tinstone and gold, besides other minerals. In a sample of 7 lbs. 37 small grains of gold were found; and from another sample, taken from the sea-beach, 6 larger scales of gold were obtained. From the material of which the cliff is composed it seems possible that these sands are derived from a granite district.

Messrs. HARRINGTON, HORAN, and CO. (Liverpool, June 1).—We are without any advice of Chile copper charters for the first part of this month, but the same are expected to be moderate, owing to receipt of cablegrams from the West Coast advising high freights and very small quantity of disposable tonnage. Chile bars have been very steady throughout the past fortnight, and a fair business has been effected at 59*l.* to 60*l.* per ton, and brand. Sellers of

WATSON BROTHERS' MINING CIRCULAR.

WATSON BROTHERS
MINEOWNERS, STOCK AND SHARE DEALERS, &c
1. ST MICHAEL'S ALLEY, CORNHILL, LONDON.

The standard for copper ore is the term given by the smelters to denote the price of a ton of metal in the ore. Thus 100 tons of ore of 6 per cent. produce would give 6 tons of metal, and this at 60*l.* per ton should be worth 360*l.*; but the returning charges—that is the equivalent for the expense of turning the ore into metal—are very high, and are always deducted by the smelter before he bids for the ore. One reason for the standard declining at the eastern sale is the low quality of the majority of the ores; and, again, the extra carriage is also deducted. If copper is at what is termed "10*s.* per unit,"—that is per "one of produce"—the price of ore is easily calculated. Thus ore of 8 per cent. produce, at 10*s.* per unit, or 1*l* of produce, would bring 4*l.* per ton.

The better, therefore, copper ore is dressed the better price will be got, and the less carriage there will be to pay.

The best and fullest work on the Cost Book was that of Mr. Thos. Tapping, of the Middle Temple, Barrister at Law, published in 1854. It was a prize work, having gained 20 guineas offered through the *Mining Journal* for the best paper on the Cost Book System in general, in 1853. The jurors for awarding this prize was Sir R. P. Collier, Mr. C. Hancock, Mr. J. H. Murchison, J. Y. Watson, F.G.S.

About 1784 the Parys Mines produced 3000 tons of copper annually. Copper was then over 100*l.* per ton, making the return of this mine over 300,000*l.* a year. About that time as much as the whole of Cornwall was producing.

Gossans, always looked upon as a good indication in the backs of lodes, is clay, mixed with silica and oxide of iron. This gets more mineralised as it gets deeper, and generally results in a good course of ore.

About 100 years ago there was a shoal or rock out at sea 720 ft. from the beach at high water at Mount's Bay, Penzance. This rock was covered by the sea about 10 months in the year, and there was sometimes 19 ft. of water upon it. And it was upon this rock that a poor miner of Breage—one Thomas Curtis—began mining in 1778. Altogether it was a most extraordinary attempt, and the "Wherry Mine," as it was called, was fully described in Mr. Watson's "Compendium of British Mining." Veins of tin had been discovered in an elvan course running in front of Penzance, and to work them the old miner provided a water-tight case on the rock, against which the sea broke while he was sinking his shaft. A communication was made with the mine by means of a wooden frame. Three summers were consumed in sinking the shaft, and innumerable trials and difficulties had to be overcome. After about 600*l.* worth of tin had been raised, and the nature of the lode seen, a steam-engine was erected on the green opposite, and hanging-rods from it carried along the wooden bridge to the mine. In this way 70,000*l.* worth of tin ore was raised, and then in the height of its prosperity the mine was destroyed by an American vessel which broke from its anchorage in Gwawas Lake, and striking against the stage on the rock demolished it, and the machinery.

St. Michael's Mount, now surrounded by the sea, was formerly enclosed by a very thick wood, and called in Cornish "Caraclowse in Cowse"—the hoare rock in the wood. And it is supposed that by a convulsion of Nature some 800 years ago the submersion of the wood and adjoining land took place, and this may account for the veins of tin.

Mr. F. Braby, one of the large shareholders in D'Eresby Mountain, has just visited the mine, and under date of 21st writes us:—"I have seen to-day some splendid galena brought out of the No. 6 level at D'Eresby Mountain Mine. This is from the heading side, or footwall. There is continual improvement here, and Capt. Sandoe assures me that he has never seen the bottom end look so promising as now."

At Aberllyn the same gentleman writes:—"They are getting more blonde, and of somewhat higher quality; some carbonate may be here and there seen with the sulphide."

An important discovery has been made at Wheal Crebor, one that may double the value of the property. The rich Bridge lode of Bedford United has been cut in the north part of the set, and fine spots of rich quality copper ore are found in the spar. This matter will be brought forward and fully discussed at the meeting on July 5, when we fully expect a dividend of 2*s.* 6*d.* per share.

Under date 23rd Mr. Braby, one of the directors, writes us from Carnarvon Copper Mine, having been underground there. He says there are "considerable reserves laid open that can be worked as soon as ventilation has been secured by hoisting from the sump at the 80 to the 90 level." And this will not take long, as when he was in the 90 end he could plainly hear the men working in the sump. From the 90 end Mr. Braby broke ore of at least 15 per cent. produce, and the floor of the level "is resplendent with sulphuret of copper." We have often explained to our readers that Carnarvon was not a mere ordinary mining speculation, but a property upon which a large sum of money had to be spent to arrive at a certain and well known result. The rich sump at the 80 was in a fine course of ore when it was flooded, and to sink a new shaft from surface and drain the 90 level to unwater and ventilate it has cost at least 12,000*l.* and several years' work. We hope soon to be rewarded both for patience and outlay.

We have this week received several letters and enclosures from Tyn-y-fro shareholders asking our advice in regard to some proposed exchange or arrangement. We are not, however, sufficiently acquainted with all the circumstances to advise publicly.

Can any one inform us if there is a good market for manganese, and at what price?

In about a fortnight we hope to reach an important point at East Blue Hills.

From Mr. J. B. REYNOLDS.—Extreme quietude has characterised the mining market this week, notwithstanding the advanced price of tin, and the prospects of further advance. It is difficult to find a reason for this state of matters, unless it be that the unmeasured and virulent attacks which have been made on the new Cornish limited liability concerns have had a prejudicial influence, and although we are in no way connected with any of the new limited companies that have been floated during the last eight months, we cannot help expressing regret that the condemnation should have been so strong and universal, not only in mining circles, but on the part of those who are utterly incompetent to give any opinion whatsoever on matters of this nature. Some articles, indeed, have been so biased as to give the reader the impression that the authors must have some interested motive in the production of their one-sided statements. We do not question that promoters, who have charged so heavily for gold and Cornish properties, may have made a very serious mistake, but to assume that the properties taken up in Cornwall have not been thoroughly tested and worked out is an assumption as unfair as it is preposterous.

Of East Wheal Rose, at any rate, we happen to have some knowledge, and it is our belief, provided the management of this mine is on economical principles, and that the shareholders' money is spent in the development of the property, that the mine has before it a prosperous career. This statement is a purely disinterested one, and may be taken for what it is worth; but whether economy has ever been known to be practised under Limited Liability Act is another matter. In giving this opinion, however, we do not refer to the company or to its constitution, but merely to the mine itself. There may be other properties equally promising, and probably, if the attacks upon them are continued, it will only serve to bring out more prominently their merits. Fair play is a jewel, and we think it time that the violent attacks which are made on mines should at any rate be met, and that those engaged in the prosecution of this all-important industry should stand their ground.

In the early part of the week West Kitty shares remained firm, with but little inclination on the part of buyers to advance their limits. Towards the close, however, greater stringency is observable, with a tendency on the part of buyers to make more liberal offers.

East Poldreys have been unduly influenced by interested and adverse reports respecting the mine, reports to which, on the highest authority, I can give the most unqualified denial; and there is no reason to suspect any changes here beyond those common to all mines.

West Polbreys remained very stationary in the early part of the week, with scarcely any variation, but now the demand appears to have sprung up, and shares have been sold hands as high as 30*s.* each. This is said to be one of the

finest sets in Cornwall, and is considered by good authorities not to be second to West Kitty itself; but whether this sanguine view is justified or not events in the future will prove. The property is magnificently situated, and we have not the slightest hesitation in saying that the shares should be bought.

West Peevers are said to be good to purchase even at the handsome market value of the shares at the present moment, and it is earnestly to be desired that this mine may even exceed the expectations formed of it by its largest shareholders. The success of Wheal Peevor casts a great lustre on mining enterprise, as does also the success of any legitimate undertaking, and this being so, the prospects of Wheal Agar are haloed with unqualified satisfaction. It is also pleasing to note the improving prospects at South Frances, and probably Capt. Crase will take his place amongst the most successful mine managers of the day.

There are strong indications that the upward movement in Cook's Kitchen is justified by facts—one, not the least noteworthy, being a violent attack made by an anonymous writer in the West Briton a few days ago. Such onslaughts by anonymous writers are generally the forerunners of success, and shareholders should never, therefore, be guided by adverse criticism, which is so manifestly unfair.

The St. Just district does not seem to be attracting that attention which one would desire, and the same may be said in a great measure of the St. Agnes district, but the immediate future of the latter is secured we have no hesitation in saying by the position West Kitty is taking, and by the prospects of New Kitty and West Polbreys.

New Kitty we have another and striking instance of the apathy of investors. It reminds us very forcibly of the state of affairs in West Kitty some 18 months ago, when no one would look at the shares at 30*s.* each. We shall not be surprised to see an advance in New Kitty of cent, per cent, or more, and that shortly, and there appear to be some whose residences are not far from the mine who are waking up to the conviction. It is also rumoured nearly all the buying orders for West Kitty are coming from Cornwall, but we cannot vouch for the accuracy of this report. We have no doubt whatever that the future of Cornish mining will be better than the past has ever been. Everything points to this conclusion. At present, for the reasons set forth in the beginning of this article, the progress of prices have been momentarily checked, but the check is only temporary, and will be succeeded by a rebound.

REPORT FROM CORNWALL.

June 23.—Our anticipations have at length been fulfilled, and Midsummer sees the prospects of tin mining advanced to a position that three months ago might indeed appear deserved, but hardly looked probable. There is no reason now in the nature of things why we should see any backward movement, at least of consequence, but why the remainder of 1881 should not witness the somewhat further improvement and consolidation of the position already attained. We are not sanguine of a much larger advance, nor indeed do we think it desirable. If the figure advances to 100*l.* it will yield a satisfactory profit to all the mines that are worth working under existing conditions; if it goes beyond that we shall be sure to have increased foreign competition and reaction, and rather than run that risk it would be better to stay where we are.

And there is another danger which is more pressing and serious—the danger of the over multiplication of mines, which if they all turned out well would be certain to reduce prices by stimulating production, and again increasing the supply above the demand; and the danger of the discredit some of them at least are certain to throw upon wise and legitimate mining by their haphazard and doubtful character. It is no use to shut our eyes to facts which are already becoming apparent to outsiders, who are only too apt from past experience to give Cornish mining in gross a bad name, which does not belong to it, and those who are really interested in the continued welfare of our great industry should do their utmost to disown such things as these. The bane of Cornish mining has long consisted not in the action of its true friends and consistent supporters, but in the proceedings of what may be called its hangers-on. Cornwall needs outside capital, and no small amount either, to develop its mineral resources, and can offer fair prospects of return, but its chances of obtaining what it wants are materially damaged by any line of action which brings it into discredit with outsiders. Because capital just now is plentiful, and there is a want of means of investment, people are not a whit the more inclined to throw it away, and, sooner or later, they are sure to resent being misled. It is really in the interest of the mining community at large that this should not be. Legitimate mining is as fair and as sound an investing speculation as any other industry, but there is need of distinguishing between the true and the false.

We hail with pleasure any step that may be taken for the improvement of the present systems of sale and of smelting of tin and of copper; but we confess we despair, so far as tin is concerned, of seeing any gain from the multiplication of new smelters on the old plan. What advantage has anyone derived from the last movement in that direction? Let the mines smelt their own tin, and the problem is solved; or if a company must be formed let it be a company for smelting only—that shall turn the black tin into metal at a fixed rate of charges, and hand it back to the mines for disposal. That might do some good; and for copper smelting, except in the case of very large concerns indeed, appears the only way. It certainly is feasible, and it distinguishes two branches of business that have no essential connection—smelting and selling. It is the combination of the two that gives the smelters their advantage.

There is a paragraph in the new report of the Metalliferous Mines Inspectors which we very much regret to see—that in which Dr. Foster complains that the fines inflicted for offences against the Act are in most cases inadequate, and traces the cause to the fact that the magistrates in the mining districts are largely interested, either as lords or as adventurers, in mining enterprise. It is not a pleasant idea by any means, and we all know that "Cesar's wife should be above even suspicion"—so that the misfortune lies almost as much in the suggestion being possible as in its being proven. But what is to be done? Where in the mining areas shall we find any large number of magistrates that are not in some way or other associated with mining; and if they do not act, who can? Probably the effect in some localities would be to throw these cases into the hands of clerical magistrates—a still worse evil, since these gentlemen, with the very best intentions, are, as a rule, the very worst men of business and action in existence.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

June 23.—The coal trade continues languid, whether furnace or forge sorts are spoken of. Some of the colliery proprietors are again beginning to agitate in private for the bringing about, if possible, of a return to nine hours as a working collier's day instead of the eight hours, which have so long prevailed; but the movement has not yet taken any definite shape. Pig-iron looks rather more healthy this week.

An advance of 2*s.* 6*d.* per ton was this afternoon asked in Birmingham by some agents of Northampton and Derbyshire makers. Native part-mine pigs varied between 2*l.* 5*s.* and 2*l.* 12*s.* 6*d.* per ton; and cinder pigs ranged from 2*l.* to 1*l.* 15*s.* Some native all-mine hot-blast pigs were to be had at 3*l.* per ton, but superior sorts were 2*l.* 6*d.* to 5*l.* per ton higher. Plates are dull at 8*s.* to 9*s.* and 9*s.* 10*s.* according to quality. Bars of the best sorts are comparatively inactive at 7*l.* Common sorts are 6*d.* and under. A capital demand is maintained for sheets for galvanising and working-up purposes, and makers are firmer in their prices. Hoops are selling well at 6*s.* 10*s.* to 7*l.* at the works.

The lock-out at the collieries of Messrs. Bagnall and Sons (Limited), and of Messrs. Mellor and Cox at Bentley, which arose out of the refusal of the men to assist their employers in meeting increased Mines Drainage rates by accepting a reduction of 1*d.* per day, is now at an end. An arrangement has been made for the resumption of work on the old terms.

A Court of Mines Drainage Commissioners and Arbitrators sat last Saturday in Wolverhampton to hear appeals against a draft award for a mines drainage rate in the newly defined Tipton district. The rate proposed was the maximum allowed by the Acts—3*d.* per ton on freeclay and limestone, 9*d.* on ironstone, and 6*d.* on coal and slack. There were a large number of appellants, the chief of whom were Messrs. H. and G. Ward, the Patent Shaft and Axletree Company, and Messrs. Phillip Williams and Sons. The first obtained no relief; the second a remission of one-third as to their Millfields Colliery, and a case for a superior court as to whether their Mounts Colliery was not entitled to total exemption; and the last named appellant obtained a remission of one-third also.

Ironmasters are complaining of a revised scale of charges for the carriage of iron and minerals that has just been issued by the North Staffordshire Railway Company. The company base their charges on a short-weight ton of 2240 lbs., instead of as heretofore on a long-weight ton of 2400 lbs. By this revision there is a net increase of

2*d.* per ton. On pottery-mine the new rate is 3*s.* 8*d.* per ton carried in owners' trucks, and 4*s.* 6*d.* in the company's trucks, for delivery in South Staffordshire.

TRADE OF THE TYNE AND WEAR.

June 22.—The steam collieries have gone on regularly during the week, the supply of tonnage is good, many vessels previously chartered for the Baltic are due, and the prospects for the next few weeks are satisfactory. The June coal shipments are nearly equal to average years. Durham second-class coal is in only moderate demand, owing to dullness at ironworks. Contracts for blast furnace coke for the next half year are being made at slightly lower prices than at Christmas. Work will be suspended at Seaham on Saturday and the horses drawn to bank preparatory to opening the long closed Maudlin seam. The bodies remaining from the September explosion will be recovered if possible. The Durham coal and coke trades are dull; the output has evidently been raised too high for the requirements, and without immediate improvements many second-class pits will be closed during the summer. One of the Weardale Iron Company's collieries at Tudehoe will be closed immediately, a band having deteriorated the seam. The make of iron in Durham and Cleveland is to be reduced by 1000 tons per week.

The production of pig iron in the district embracing Cleveland and Durham during the half-year now drawing to a close will be officially declared in about ten days to be over 1,550,000 tons, which is about one hundred thousand tons in excess of that of any previous half year, and is, moreover, the production of 120 blast furnaces. This is unparalleled in the history of the iron trade.

The iron trade has not been quite so dull as last week, and a slight rise has been effected; sellers on Monday were quoting an advance of 6*d.* per ton on the previous week. The change of prices in Scotland is believed to be caused by speculators. The view is also held that the Cleveland trade at present is unpromising; buyers, therefore, only purchase for immediate wants. Offers are made to purchase forward for four months at 37*s.* No. 3, but sellers will not commit themselves to that period, and only a limited business is done in consequence. The make of iron is likely to be reduced soon. It is proposed to turn the Bishop Auckland Ironworks into a limited company. Shipments are going on freely to Scotland, and an increased demand is expected from America. There has been a better enquiry for manufactured iron, but the demand for plates has only been moderate. The foundry trades are only moderately supplied with orders. Ship-plates are 5*l.* 17*s.* 6*d.*; bars, 5*l.* 7*s.* 6*d.* to 5*l.* 17*s.* 6*d.*; boiler plates and sheets about 7*l.* Pig-iron is quoted 36*s.* 6*d.* No. 3; warrants, 37*s.* 6*d.* No. 3. Messrs. Connal's stocks of warrants are 175,732 tons—an increase of 1097 tons on the week. The coal and coke trade is quiet at Middlesbrough; coke is offered forward on easier terms.

The Tyne Commissioners expect to open Coble Dean Dock—24 acres of water, exclusive of basin and lock, and 3650 ft. deep water quay frontage—next year. Under Mr. Ure, the Commissioners' engineer since 1859, the Tyne has been vastly improved. At that time vessels drawing 20 ft. could only enter and leave at best spring tides. From Shields harbour to Newcastle Quay there is now over 20 ft. at lowest tides; there is 18 ft. for 2*1*/₂ miles above the swing bridge, and 12 ft. at Blaydon. In 1854 the average tonnage of all vessels trading to the river was 149 tons; in 1880 it was 359 tons. The number of vessels above 500 tons register was 422 in 1863, and 4453 in 1880. The improvements have involved the removal of nearly 1,500,000 tons of rock and earth, and have vastly stimulated the trade of the river.

At the Stephenson Centenary Sir Geo. Elliot took a desponding view of the future of the Tyne, no doubt alluding to the exhaustion of some of the best seams of coal on both sides of the river, but there is still a large quantity of coal, and further important discoveries are possible in the lower seams of East Durham and Northumberland.

The centenary of the birth of George Stephenson was celebrated in Newcastle and district with more than regal honours. It is rarely, indeed, that a resolution to do homage to the memory of a distinguished man is universally acceptable, but throughout the whole proceedings, which culminated in the magnificent spectacle on Thursday, there was not even the faintest note of discord. The arrangements were made by a committee, of which the Mayor of Newcastle was Chairman, and the procession proved to be a great success. The municipal bodies of Tyneside marched in sections, and the workmen at the various factories and collieries naturally formed sections, each of which forming a division, which was headed by bands and banners. The utmost order and decorum prevailed, and all the arrangements were carried out with something like military precision. Various opinions are expressed as to the number of men who attended, but we are inclined to consider that the aggregate amounted to 70,000. The engines exhibited at the Forth sidings formed a most instructive and beautiful spectacle. The No. 1 engine of Stephenson—a plain, strong, and certainly ingenious machine, which did much work on colliery lines—was, of course, a very marked contrast to the highly finished and powerful engines of the present day, showing not only the immense strides that have been made during the past 50 years in the skill of engineers who design engines, but also in the skill of workmen, who manipulate and carry out those designs in iron and brass in such high perfection. This exhibition on a large scale showed the gradual progress (no doubt there were some missing links) from the first useful machine to the highly finished and beautiful engines of the present day. The exhibition of working models and drawings in the Wood Memorial Hall showed the origin and progress of the locomotive and other engines, and this was certainly an attractive and most instructive spectacle. The meeting on the Town Moor and the banquet in the evening was not attended by many distinguished foreigners, but two representatives of the King of the Belgians were present, and most of the leading men of the district. Lord Ravensworth ought to have been there, as his ancestor had a good deal to do with the construction of Stephenson's first locomotive; he encouraged the rising engineer, and freely provided the necessary funds to carry out his ideas. The King of the Belgians has contributed 500*l.* towards the funds of the proposed Stephenson College.

The enthusiasm which has been called forth by the Stephenson Centenary has caused remarks in some quarters as to the neglect which has been shown to the memory of other great men who have arisen in the district. But if we look at the stupendous results of the genius of this one man, not only in this country but throughout the globe—results which will probably continue while time shall last—this need not excite any surprise. England has only produced one Shakespeare, and it is not probable that another Stephenson will appear. It is held that if Stephenson had not improved the locomotive so as to render it commercially successful this would have been effected by some other man; but this is merely an opinion or speculation. There is no certainty about this; all the professional educated engineers of his time were opposed to him. The locomotive as a means of conveying goods and passengers economically was considered a chimera of the wildest kind. Stephenson's first engine, although worked, was not a commercial success; it did not execute the work cheaper than horses, but he persevered and conquered difficulty after difficulty, constantly making improvements, and when he found that he could improve the engine he set to work to improve the road, remarking in his familiar style, that the "locomotive and the railway were like man and wife." And when he had made considerable progress, the

Stephenson in this, as compared with his former engines, is truly marvellous, as it really embodies all the essential features of the mighty engine which has since so vastly improved the mode of travelling, the conveyance of goods and minerals, and played such an important part in the civilisation and advancement of the human race. After the Rocket improvements were comparatively easy, as mechanics were trained, more skilled, improved railways were constructed, and larger and heavier engines were introduced, gradually increasing the speed of locomotion from 20 to 60 miles per hour.

TRADE IN SOUTH WALES.

June 23.—The important works of Messrs. Booker, of Pentreth and Melingith, covering about 865 acres, of which 611 are freehold and 254 leasehold, are to be brought to the hammer on July 13. These works include the making of iron and tin, an ochre works, the raising of coal, &c., and are now sold by order of the Court of Chancery. The history of these important works extends back to the middle of the last century. They have to this day returned immense profits to the Booker-Blakemore family. Some few years ago they were formed with a limited company, but they did not prosper, and were involved in the recent failure of the West of England and South Wales District Bank. There are quantities of minerals situated on the estate, both iron and coal, and ochre is brought up from the earth in an almost perfect condition for the purposes of trade. The country round about is of the most beautiful description, and in the hands of experienced people there is no doubt that the works will again become a good property. The Tredegar Iron and Coal Company have just declared a dividend of 4 per cent., which is considered satisfactory, when we remember that important and expensive undertakings have been carried on during the year, and that upwards of 25,000L. have been carried forward to next year. Nothing has been done at present at the Cyfarthfa Works, but Mr. Williams, of Middleborough, is actively engaged with other gentlemen in inspecting the place, with a view to a commencement of the projected alterations. According to an opinion expressed by Mr. Joseph, of Tydrew, at a recent meeting of the South Wales Institute, it is probable that the Welsh iron ore trade may again revive, owing to the favourable result of the experiments made in the Thomas and Gilchrist process. This will prove, if true, a wonderful stimulus to the trade of the district. The iron and steel trade is fairly active, and although prices are low the works are kept steadily going. The amount of iron shipped at Cardiff last week was 1850 tons, and 5080 tons at Newport. The patent fuel trade is good at Swansea, and 7255 tons were cleared last week. The coal trade at Cardiff is exceedingly brisk, and prices for forward delivery have an upward tendency. The amount shipped last week was 113,077 tons, and more could have been sent away if proper dock accommodation were supplied. The steam coal trade is constantly expanding, and if facilities for shipping do not go hand in hand the trade will go away to other ports. At Newport 21,922 tons were shipped, while Swansea followed with 11,553 tons. The tin-plate trade shows no improvement, and the present understanding between masters and men is not considered satisfactory. The masters in some instances have proposed arbitration, and in other cases have promised to revise the list of prices. Those who have gone in may yet come out again, and the works may be thus brought to a standstill. A little knowledge of political economy on the part of the men would show that if 6,000,000 boxes represent the annual demand, and 8,250,000 boxes are made, the result must be that prices will continue low. There are, again, numerous small works which can be carried on with limited capital, the owners of which are outside any association, and keep on working irrespective of the state of the market. The best brands are sometimes placed on inferior goods, and this fact helps to give South Wales tin-plates a bad name in the American market. Altogether, the prospects of this industry are by no means healthy.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

June 23.—Lead mining in Derbyshire continues in its usual quiet state, there being nothing new to report, everything being of the usual routine character. A considerable number of lead mines that have been but partially worked are standing, waiting for capitalists to develop them, yet no one appears sufficiently courageous to start them, although some of them are in all probability much better than many that have lately been brought under the public notice as veritable El Dorados. Now, however, that so many new companies have been formed for the development of the mineral treasures at home and abroad, it does appear somewhat singular to find that Derbyshire has been overlooked. Without looking at the abandoned mines, there are many now being worked in a comparatively primitive manner, that would well repay the outlay of capital for engines and machinery; for experience has abundantly proved that lead mines can only be profitably worked by means of the best appliances for minimising manual labour. In Derbyshire, however, many of the mines are in the possession of working miners, who have no capital but their hands, and human machinery stands no chance with the mechanical. Still the stores of lead remain, and may before long be developed to a much greater extent than they have been for a long time, whilst it is the opinion of many practical men that Derbyshire offers a good field for investment, so far as lead is concerned.

The demand for house coal has fallen off considerably of late, but the comparatively short distance from Derbyshire to London, as compared with other colliery centres, causes a steady business to be done with the Metropolis, more especially from Clay Cross, Eckington, Langley Mill, Blackwell, Grassmoor, and Staveley. Several of the leading companies have their own depots and offices in London, and so sell direct to the consumers, so that there is no intermediate profit. Were this course pursued by colliery owners generally both them and the purchasers would be benefited—the one by a fair profit, and the other by paying a lower price. But so long as merchants have all the power, and are able to fix the price at which coal shall be sold, the owners of pits will have to sell their produce at little or no profit and the miners will have to be content with very low wages. Hard coal goes off better than it did, but still the demand is scarcely equal to what it should be at the present time, which is generally considered the busiest period of the year for steam coal. The furnaces consume about an average quantity, and rather more is required by railway companies for locomotives. Not so much gas coal is required just now, but a tolerably fair business is being done in engine fuel for some of the manufacturing districts in Lancashire. A considerable tonnage of coke is now being turned out, and meets with a rather ready sale.

In Sheffield most of the works are doing well, and in but few branches are there any complaints as to slackness. Steel material appears to be in the most request, and the production of both Bessemer and crucible is large. A good deal is now being absorbed at the two great works, the Atlas and Cyclops, for armour-plates for the Admiralty. The mills running on ordinary ship and boiler plates, sheets, and wire are all well employed. Bessemer rails are as active as ever, but the prices at which the contracts have to be taken are particularly low, whilst there is the disadvantage of a heavy railway rate to ports for shipment. The cutlery houses are doing well, large consignments going to America, Australia, &c.

REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

June 23.—I have a pretty good eye for mountains myself, and I am fairly well acquainted with the hills of Cardiganshire, but I confess that I do not know the peculiar features constituting what "Traveller" is in last week's Journal describes as their "lode bearing aspect." Is it asking too much to request him to describe these features to the readers of the Journal? Of course we all know that the general run of the strata of the county from the north-east to the south-west, and that the rolls or undulations of the strata are generally speaking at right angles to this direction. But what is desirable for us to know is what this has to do with the occurrence of productive lodes of metalliferous minerals. Also what are the differences in aspect between the hills along the productive metal-

ferous zones of the county and those which lie between these and which are barren?

The paper by Mr. Walter Keeping, M.A., F.G.S., formerly of the University College of Wales, Aberystwith, and now lecturer on Geology in the University of Cambridge, on the Geology of Central Wales to which I have before referred, appears in the new number of the "Journal of the Geological Society." The paper shows a large amount of painstaking research, but I repeat now what I said at the time the paper was read, that the author has misread the Stratigraphy of Cardiganshire. To place the metalliferous strata of the county among the Llandovery beds is to place them where no productive lead mines are worked in Great Britain; indeed, I may say in the world. Mr. Keeping relies a good deal upon fossil evidence in doing this. Fossil evidence is well in its way, but it cannot be taken apart from stratigraphical sequence. But the fossil evidence does not help Mr. Keeping. Take the Crinsidea, he has found nothing peculiar to the Llandovery beds. So with Trilobita and Mollusca. He has not found any organisms of the three groups named which are not found in abundance and in beautiful preservation among the Llandeilo strata of the Shropshire mining district. Nor will it do for him to rely upon the Graptolithina. The fact that Mr. Sopwith, whose personal researches are chiefly confined to the Silurian strata of Scotland, has only found the eight graptolites he particularises in what he considers the Scotch equivalent of the great Llandovery group of Wales is no proof that these fossils have not a larger vertical range. Indeed, if it can be proved stratigraphically that the metalliferous strata of Cardiganshire are of Llandeilo age that is older by two great series of rocks than where Mr. Keeping would place them. It follows as a natural consequence that these fossils have a wider range through time than is inferred from Mr. Sopwith's researches among this group of organisms. And it can be proved stratigraphically that the metalliferous rocks of Cardigan do belong to this older group, and therefore harmonise, so to speak, with the lead-bearing strata of the older rocks all over Wales and Shropshire. For example, the rolls and undulations of the strata in Cardiganshire are prolonged into Merionethshire and north-west through Wales, and a very little observation will show that it is in the prolongation of the Llandeilo beds south-westward that the lead ore deposits occur, and that in the troughs between these ridges, which are filled with the newer strata of the Bala, Llandovery, and, taking West Montgomeryshire into account, Wenlock groups, we have the barren or non-metalliferous zones of the county. This is all so plain to me from long observation and research, that I am tempted to think that there is no need for me to write thus for my readers, the consequences, however, of a wrong reading of the strata may be so serious commercially, perhaps more than scientifically, that I may be excused for enlarging on the subject. I would not myself, nor would I like any one else that I cared for, to go floundering in Llandovery strata, either in Cardiganshire or elsewhere, after lead ore.

FOREIGN MINES.

ST. JOHN DEL REY.—Telegram from Morro Velho, dated Rio de Janeiro, June 22: Produce, twelve days, first division of June, 12,000 oits.; value, 4650L.; yield, 5 3/8 oits. per ton. Profit for the month of May, 2300L.

POTOSI.—Gold on hand first fortnight 400 to 500 oits. Ample supply of water; equivalent to ten days of 24 hours full work.

ALMADA AND TIRITO CONSOLIDATED.—Telegram from Mr. Clemes: June 2: Profit for April, \$3600.

DON PEDRO.—Mr. Treverton writes under date May 26: Steam-engine, &c.; Being idle for convenience of dropping lift in No. 1 inclined shaft, I availed myself of the stoppage to examine all valves and obtaining some hemp; packed both plungers with same instead of cotton, which on being put to work proved to answer much better than the cotton packing, at the same time put in all new packings in valve of hydraulic. At the present time engine working pretty well, and with both lifts working fairly.

RICHMOND CONSOLIDATED.—R. Richard, June 1: There is nothing to report from the mine or any other department, as the works were closed down for repairs on Monday last.

NEW QUEBRADA.—Month of April: Despatch from mines to Tucuacá, 981 tons, 11 1/8 per cent. dry; despatch from mines to roasting floors 422 tons, 7 7/8 per cent. dry; total output 1383 tons, home arrivals 1341 tons, sales 463 tons (average price per unit 12s.), quantity afloat on April 30 1653 tons, stock at the mines on April 30 2070 tons, stock of ore on wharf at Tucuacá on April 30 585 tons.

PORT PHILLIP AND CO. ONIAL.—The directors have received advices, dated May 7, giving the results of the operations for the month of April:—Four week's return ending April 20: Quantity of quartz crushed on company's account, 399 tons; pyrites treated, 25 tons; total gold obtained, including extra cleaning, 207 tons 3 dwt.; yield per ton up for the half-year quartz gold, 1 dwt. 2 grs.; quantity of quartz crushed on tributaries' account, 3333 tons; total gold obtained from tributaries' quartz, 775 oits, 13 dwt. 12 grs.; yield per ton of tributaries' quartz, 4 dwt. 15 grs. Receipts, including 1692L. 0s. 3d. obtained from tributaries, 2551L. 19s. 3d.; payments, including 2382L. 10s. paid for firewood, 1757L. 17s. 6d.; available balance, 2453L. 8s. 1d. Amount divided between the Port Phillip and the Clunes Companies was 900L.; the Port Phillip Company's proportion, 12-20ths, was 595L.; balance carried forward to next month's account, 1553L. 8s. 1d. Remittance, 600L.

PLACERVILLE.—Isaac Thomas, May 29: The drift running north from the cross-cut in the 600 ft. station has been driven 5 ft., making a total distance of 22 ft. The main shaft has been sunk 7 ft., making a total depth of 669 ft. The winze from the 5th level has been sunk 1 ft., making a total depth of 56 ft.

GOLD COAST.—The manager's report, May 10, is as follows:—Health of all good.—North Tunnel: We have cut the outer wall of the lode here, and are some 4 ft. through it. Owing to the extreme hardness of the rock, which is identical with that at the Effuenta Mine, it will be some 10 or 14 days before we get to the gold bearing part of the lode. The north shaft has been squared off and secured with timber. A shell has been built over the mouth, and a windlass is being erected to-day.—Sawpit Drift: A level has been turned in here from the drift towards the south on the lode, and is now in 27 ft. We hope to find the lode get more solid as we follow it up where it was discovered in the pit above.—South Shaft: This is now down 57 ft. Some stone taken from the bottom gave a good trace of gold. We expect to cut the lode here also in a few days, and if proved to be rich (we may of course have to drive on it a little to do so) I shall put all our force on the south tunnel and get that through to the lode. The two ends of the property will thus be proved at once.

Telegrams from Madeira: North lode opened, and the ore showed a value of 30 to 40L. of gold per ton of ore.

RUBY AND DUNDERBERG CONSOLIDATED.—Report on the mines for the week ended May 29: Dunderberg: The 700 ft. level has been advanced 18 ft. during the week; total, 435 ft. from the shaft; the ground is very changeable—the present end is in favourable ground for drifting—the water in this level has decreased about two-thirds in the last 10 days. We are using more water now on account of the extra hoisting, as you will see by the number of tons shipped during the week, consequently, we are compelled to haul water again. The No. 2 winze has been sunk 9 ft. during the week; total, 151 ft. below the 600. There is a decided improvement in the No. 1 ore body about 35 ft. above the 600, which is now making down last of the 600, consequently, a cross-cut has been run last—28 ft. from the 600, at a point 40 ft. south of No. 2 winze, and the ore body found to be about 6 ft. wide of extra good quality. No. 5 ore body has not developed quite so well as was expected, but it still looks very well and producing considerable ore. The 600 south has been advanced 11 ft. during the week; total, 22 ft. past No. 5 winze; a bunch of ore about 6 ft. wide, and 8 ft. long, was passed through during the week. The present end is in favourable looking ground, containing a little ore. No. 3 ore body has improved during the week; the ore is from 2 to 4 ft. wide, and about 12 ft. long, and a better quality than heretofore. There is no change in No. 4 since my last. A drift has been commenced to-day from the 300 ft. west cross-cut to intersect No. 4 ore body.

Bullwhacker: The ore in rise above the 250 continues about 3 ft. wide. The south drift from the south-east cross-cut has been advanced 24 ft. during the week; this drift is in very promising looking ground containing low grade ore and iron with occasional bunches of good ore; the vein at this point appears to be quite large, we have already ascertained it to be 8 ft. wide. We are now cross-cutting west to find the footwall. Have shipped 16 tons of ore this week, and have 10 men at work.

—June 21: Copy of telegram received from Eureka to-day:—“The week's run from the furnace was \$13,500, from 225 tons of ore, producing 42 tons of base bullion. The shipment of the week's were 277 tons.

CANADIAN COPPER.—Frs. Bennetts, June 10: There has been no important change in the general appearance of those mines since my report to you of the 3rd inst., with the exception of an improvement in the vein in the rise above the back of the 10, east of No. 7 shaft, at the Hartford Mine; and as this, although called the 10, measures much more in the inclination of the vein (probably 18 ft. min.), and is at the foot of a hill of some altitude, I have strong reasons to expect to open up some good stoning ground at this point, more especially as it goes back over the ore ground of the deeper levels. The 40 is not quite so good in the present end; but this being a segregated vein, I think there is a better vein north than we carry in the drift. The 50, east of No. 7 shaft, still yields good ore. The vein in the 85, east of No. 7 shaft, is wider than seen in the drift (15 ft.), and the ore is of good quality. The vein in the stopes throughout the mine realises the expectations formed from the appearance of the vein driven on the water level. We are ready with the whim and appliances to haul out the water from No. 1 shaft, and expect a rope daily.

NEW GOLD RUN.—F. M. Chadburn, June 6: Mine: I have been running drifts continually since starting our present drift (the 23rd ult.), and if water holds out so that I can make the usual run, shall make a good clean up. We have a large amount of clay to contend with, which must be blasted and run off in order to get at gravel; this will make the expense of run more. I think we can run until about the 20th inst. I am running out cuts as clean as possible and am preparing to shovel them.—Mill: At present I am doing no work in the bottom. I have out on drifts about 600 to 800 tons cement, which will be crushed as soon as I can start the mill. The drifts are full and I cannot get out more drift until mill starts. The mill has not paid that far, and I cannot make it pay unless I strike better bottom than anything yet found. It might be well to prospect it by running drift ahead, and also running cross-drifts without attempting to get out enough dirt to keep mill running. There will not be water enough to run the mill during the summer months to any extent. I cannot but think that the lead continues either on the west or east rim, and that all our drifting has been off the main lead, or that a barren streak occurs at this point. The bed rock uncovered was very rich compared with what we have worked in the drift, for which there seems no explanation unless it is a barren streak or a sharp turn in the lead.

FLAVILLA.—R. Gundry, June 2: There is nothing new to report concerning the mine since my last letter to you. The ore has been assayed and sacked, and is being shipped. We have 273 sacks of first class, and 96 sacks of second class. Amount of work done for May is as follows:—Brooks' drift 21 ft. 6 in., and drift in raise 25 ft.

JAVALL.—Extract from G. E. Chambers' letter, May 6: As I have already reported to you the manto on the north side bids fair to be a great success, and we already bring down about 300 oits monthly to the mill. I beg to hand you the following as my report of the past month's working:—Mine: Very little work was done in the interior of the mine; I had most of the contractors occupied on the surface making ditches, &c., in anticipation of the wet season. Rise No. 2 from Pinn's to Pollock's tunnel was driven 3 varas; the ground continues to be very hard, and of poor quality; 3 varas were driven east under Nispero. The lode is also hard, but bears a thread of soft and very good quality quartz, which bids fair to greatly increase in width as we go on. On the whole 272 varas were driven in the different interior workings.—Mill and Remittance: Notwithstanding the Easter holidays by paying the men extra wages I was able to work the mill 21 days, sometimes with 20 and at others with 25 stamps; the quartz supplied being chiefly manto, we crushed 2091 tons, which yielded 405 1/2 oits. gold, making an average of 3 dwt. 21 grs.—much the same as usual. I have now all stamps in perfect order for the wet season, and hope not to have such drawbacks as we had last year. The watercourse has also had well looked to, and the dam and waste gate strengthened; this month I intend to make an overflow on the place where the breakage was last year, so that when the water rises to a certain height it will pass over the bank through a large boarded canal, and thus, I think, entirely prevent a repetition of the misfortune such as we had in October last.—Tallings Mill: The framework and foundation blocks for the square stamps are all in their places, and only await the mortar box. Unfortunately, the iron has not yet arrived at San Baldio; the dryness of the River San Juan is a great nuisance, and dreadfully delays the arrival of all goods. I have written to the port and our agents to do their utmost to urge on the landing of the things we especially want. The expenditure was 975L. 19s. 10d., the remittance is about 1000L. The heavy items for mirewood and timber continue to make our expenses very high.—Health and Labour: Dr. Birt sends his report. Labour is rather scarce, chiefly owing to the festive time of the year. The end of last month I had a visit from the Judge of 1st Instance from Singulpa. Although he came at a most inconvenient time I did my best to keep up the company's good name for hospitality. He made a complete round of the various mines in the neighbourhood, but said that after seeing Javalli he wished to go nowhere else. I hope you will agree with me in considering the remittance this month very satisfactory for the time of the year; this month I hope to do better.

SANTA BARBARA.—W. H. Richards, Paris, May 14: During April 1247 tons of mineral were stamped, yielding a produce of 3856 oits. of gold, or equivalent on an average of 3 3/4 oits. per ton of stone stamped. This produce of 3856 oits. of gold, valued at 6s. 6d. per oit., amounts to 1638L. 16s., and the estimated working cost for the month, at Exchange 21 1/2 d., being 150L. 15s. 7d., leaves an profit of 130L. 0s. 5d. for April. In explanation of the continued heavy cost for the month—Mr. Richards states, "I regret exceedingly that it is not yet in my power to report much decrease in the amount of cost. There is an exceptional item this month of about 1000L. for travelling expenses, &c.; provisions are also very dear, about 500,000Rs. about the ordinary charge, but as we have now fine weather, better roads, and a fair harvest, I hope to see this expenditure reduced to its normal rate. The charge for stores expended is nearly 2000L. more than it was 12 months since, of this about one-half is charged to new works, leaving still a sum of 1000L. to be charged to mine cost, added to this the increase in native labour of about 100%, and the increased costs can be accounted for. I repeat what I wrote on Feb. 14, last, that "I see no prospect of diminishing them (the costs) until the renewals and repairs which can no longer be deferred can be effected. The shops will I hope be completed or nearly so by the end of this month (May), and a great economy will be effected by having them in the centre of the works and under the immediate inspection of the head mechanic." Mr. Richards reports that the strakes at mill Nos. 2 and 5 had been widened from 14 to 18 in. in width, and the dressing tables to these stamps increased by 195 and 111 superficial feet, respectively, during the month, and a new amalgamation saxe completed. In addition to the above mine working cost, the sum of 642L. 11s. 5d. was estimated as expended on capital account during April, in respect of the construction of the new watercourse and new hauling machinery. The mine captain (Capt. C. J. Richards) reports as follows for April:—The quantity of ore raised during the month amounted to 1509 tons, of which 294 tons were rejected at the spalling floors as refuse stone, and 1215 tons along with 32 tons over from the previous month, in all 1237 tons, treated at the stamping mills. The average quantity of ore raised per ton for the month amounted to 57 wagon loads, and the number of holes bored per man for the month, 65.

PITANGU GOLD.—Mr. T. S. Treloar, Pitangui, May 9: The produce obtained for the month of April, from the stamping of 463 tons of the residual Ouro Poderado mineral, and from 329 tons of Jacutinga mineral raised during the month, amounted to 2105 oits. of gold, which, valued at 8s. 6d. per oit., equals the sum of 3942L. 12s. 6d.; the estimated cost for the same month at exchange 21 1/2 d. (exclusive of 95 1/2s. 3d. expended on capital account in respect of shoot for mineral), from wash-house to stamps, permanent railroad in 15 fm. level, and oilhouse amounted to 712L. 13s. 7d.; leaving an estimated profit for the month of 1812L. 18s. 11d. Mr. Treloar states: We have cleaned out most

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English investors who desire to purchase shares may deposit the purchase money with the Union Bank of London, to the credit of Preston, Kean, and Co., Bankers, Chicago, for the use of the Rico Silver Mining Company, and advise me, by letter, of having made the deposit, stating the number of shares wanted, and the name and address of the person to whom the certificate is to be issued.

J. J. WEST, PRESIDENT.

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Notices to Correspondents.

DIAMOND DIGGING.—"J. C." (Leeds).—The use of crushing machinery for diamondiferous soil has been proposed by some Cornish mining engineers who have visited the deposit, but the claimholders well understood the absurdity of the suggestion—any valuable diamonds that happened to exist in the stuff would be rendered valueless. The soil—kind of hard sandy gravel—is carefully broken into manageable lumps with pickaxes, and these are bruised with wooden mallets. By this means the mass is reduced fine enough for every stone to be seen in the washing process. It is quite a mistake to suppose that because the diamond is the hardest mineral it will not break; a comparatively light tap will shatter a diamond to fragments when the tap is given in a particular manner, and a stone worth, perhaps, 20/-, reduced to half-a-dozen fragments, worth not more than 5/- each. No machinery except for hauling is required at the diamond fields, and of this there is an abundance already provided. The wooden mallet used would seldom, if ever, break a diamond. The diamonds are usually sent to Europe in the rough. As a rule, Cape stones are not equal to Brazilians, even when the former cannot be said to be off colour, and are well cut.

THE KIMBERLEY DIAMOND MINE.—"Miner" (Calstock).—There is no lack of labour at the diamond fields, but the convicts appear to be the most desirable to employ. The free labourer earns from 20/- to 25/- per day, and soon becomes, to use the word of a Government Inspector, a lean, trembling *debouche*, but the convict, with proper discipline, clean food, and enforced temperance, has improved in every respect. Mining experience is of little value at the diamond diggings, since there is really no mining carried on; it is gravel quarrying, and the natives (blacks) seem to have the sharpest eyes for finding the diamonds when they are once shown what stones are wanted.

DIAMOND WASHING.—"Investor" (Glasgow).—The reason no "ditch companies" have been started in the South African diamondiferous regions similar to those in existence in the Rocky Mountains is probably to be found in the scarcity of water. All the South African rivers are mere streamlets, for when they widen out they are seldom more than 2 to 4 ft. deep. Frequently the water to wash a load of diamondiferous soil costs more than the diamonds obtained from it, leaving cost of labour and materials out of the question. "Investor" should read the Geographical Society's and Geological Society's Transactions.

ROCK DRILLS.—"J. C. B." (City).—Most of the drills advertised appear to give good results in practice, and the expense attending their use does not differ much. Frequently low first cost and short duration go together. When workmen give them fair play rock-drills are advantageous to both workmen and shareholders, and many of the early failures may be traced to the prejudice of those under whose control the machinery was placed.

GOLD IN WALES.—The paper by Mr. T. A. Readwin, F.G.S., shall appear in next week's Journal.

SEATITE.—If the correspondent in last week's Journal who signs himself "A. M. S." will submit me samples and prices of this, I shall be able to give him full information. The price, of course, will be ruled by the quality.—GEO. G. BLACKWELL, Mineral Broker: Liverpool, June 21.

SHAREDEALING.—"J. B." (Ball's Pond).—The company mentioned is not quoted in the official list, so that probably no settling-day has been granted.

Received.—"G. W. P." (Chelmsford)—"S. Payne" (Exeter)—"J. M."—"B. N."—
"B. G."—"Exursionist" (North Devon)—"M. N. S."—
"W. T." (Schull)—
"J. L." (Liverpool)—"S. P." (West Kirby)—
"E. D." (Chicago)—"Old Miner." The publication of the *Clausthal Lectures* will be resumed directly space can be spared for them. "Bulbul" (Bratsberg and Arendal)—"Novice" (Great Polgoon)—"Old Cornishman" (Colorado): We shall be glad to have all the particulars you can forward.—"G. M. Boddy" (West Polbreen): Shall appear next week.—"Observer" (East Caradon)—"Enquirer" (Wheal Jewel).

THE MINING JOURNAL,
Railway and Commercial Gazette.

LONDON, JUNE 25, 1881.

THE WHITFIELD COLLIERY EXPLOSION.

COMMITTAL OF THE MANAGER FOR MANSLAUGHTER.

For the first time we believe in our mining history a certificated colliery manager has been committed to take his trial on a charge of manslaughter. The explosion which took place at the Whitfield Colliery in the first month of the year was a most disastrous one, and most undoubtedly was preventable. But it would appear that in some mines every inducement is held out for an explosion to take place. In the bottom of the pit there was a smithy, where there was constantly a large fire with flues and pipes, and on the night of the explosion a boy put a quantity of oiled cotton waste on the fire, which led to a flame being raised that could not be extinguished, and led to the gas being ignited. On the day before the explosion it was stated at the inquest that the soot or coal dust in the flue was 1 in. deep, and on the night of the explosion the smithy fire was unusually large. One of the principal charges against the manager appears that he was too anxious to save the horses, and that in consequence some of the men who went down for that purpose lost their lives. Such was the evidence of a miner named HENRY WOOD. He stated that on being called from his work he went to the pit bank, and was sent for assistance. Whilst there a man named LOCKETT came up, having been down the pit twice, and said, "It's all over." The manager, Mr. THOMPSON, said, "Oh don't say so," immediately afterwards adding, "Go down again, and help to get out them horses." LOCKETT went down and was killed. Mr. THOMPSON then said to HENRY STUBBS and CAIN MAYER, "Get in that cage, I know you will soon get out them horses." They went straight down and were killed. The explosion took place soon after LOCKETT went down a third time; previous to that he did not hear LOCKETT say, "There is no fear of an explosion, thank God."

Mr. THOMPSON himself gave evidence, and said he had no fear of an explosion, but he believed that the fire took place at the flue, and that the explosion was of coal dust and smoke. The smithy had been in the pit four years, and the Government Inspector had seen it. Four horses were brought up, but after the first had been got out, in consequence occupying time in doing so, he said he would have no more of the horses brought out, but he would have the men out. Mr. THOMPSON further stated that LOCKETT was a man of great experience, and before going down the last time said, "There is not the slightest danger." It appears that the Assistant Inspector of Mines had visited the workings, for he stated he observed nothing obviously wrong in a casual inspection of the smithy. For our own part we should have thought that an open fire in the bottom of a coal mine was in the highest degree dangerous. The same gentleman also stated that the efforts to put out the fire were highly commendable, but when the efforts were found to be in vain the remainder of the men should have been removed. Mr. WYNNE, the Chief Government Inspector, was more emphatic in his opinion, for he said there could be no doubt as to where the fire occurred, what was the cause of it, nor as to the cause of the explosion; no fire, he said, should be introduced in a mine where it could be done without, and to carry out that good rule ventilating furnaces were being dispensed with as much as possible. If he had seen the smithy in the pit he would have protested against it as a dangerous innovation. The heating pipes would set fire to the coal dust, and when the fire was getting beyond control there was immediate danger, and the men ought to

have been brought out. The gas would have been drawn on to the fire and an explosion would be the result.

Such are the main points of the evidence bearing on the charge against the manager. Mr. THOMPSON was evidently an able and capable manager, and took good care of the ventilation, and had the entire confidence of the workmen. It is, therefore, to be regretted that any thoughtless act should have involved a loss of life, and placed him in a position so painful. But, to our thinking, the greatest mischief was tolerating a smithy fire at the bottom. It is now the object of practical mining engineers not to trust to the ordinary ventilating furnace, but to replace it with the fan, which does not invite gas to come in contact with the flame, but at the Whitefield Colliery there was a double invitation—there was the furnace and the smithy fire. The verdict of manslaughter is the most serious imputation that can be thrown upon the manager of a mine, stopping, as it does, his future career in a position for which he may be eminently qualified, but it is to be hoped that it will cause all mine managers to allow of nothing being done or tolerated that can in the slightest degree endanger the lives of the workmen. Nothing whatever should be risked in any case, but everything done to ensure safety, and the fact of having two fires in a mine was in the highest degree dangerous, and should never have been allowed, and to this alone can be attributed the heavy loss of life which took place at the Whitefield Colliery.

THE IRON AND STEEL INDUSTRIES OF BARROW.

EXTRAORDINARY PROGRESS.

In no part of the kingdom has the population during the last decade increased to anything like the extent as it has at Barrow, and this is the result of the vast expansion of the iron and steel industries, and the introduction of other branches in which iron and steel are the principal factors. The latter includes engineering works, iron and steel shipbuilding, boiler-making, &c. Little more than 30 years ago Barrow was a very small village, known only to fishermen, but the discovery of large deposits of hematite ironstone led to buildings being erected for the workmen employed. This was followed by the erection of a couple of blast-furnaces in 1859, and two more in the following year. The ironstone was plentiful, of excellent quality, and adapted for any description of steel; and as the demand for it increased more furnaces were erected, so that there are now 16 belonging to the Barrow Hematite Steel Company, the works being the largest in the kingdom. The works and the company may be said to be the founders of Barrow, now a large and flourishing town, the population having increased from 18,245 in 1871 to 47,097 in 1881—a rate of progression not previously recorded in our history. The works were first carried on by a private firm, Messrs. SCHNEIDER and HANAY, up to 1866, when the Barrow Steel Company was formed, and the Bessemer works laid out by Mr. SMITH, the President of the Iron and Steel Institute, and to whose courtesy, on more than one occasion, we have been indebted for an inspection of the vast works of which he is the manager. The ironworks are laid out in the most complete manner, and considerable alterations were made in the furnaces, some of which were reconstructed of a uniform height as best adapted for economising fuel, &c. The entrance to the works is a comparatively short walk from the station, the offices and waiting-rooms being handsomely furnished, and from these the visitor passes to the yard and on to the long range of furnaces, 14 of them being in a row, and quite close to the water. The furnaces have the usual appliances for utilising the waste gases for the boilers and stoves. Several engines connected with the Bessemer department are also heated by the same means, so that all appliances for the utilising of fuel have been adopted, and it is worth specially noticing that the pig is made with an expenditure of about 21 cwt. of coke per ton. In addition to a considerable number of blowing engines, there are close upon 100 boilers worked with the gases as before stated. On the ground there are a number of Coppee coke ovens for converting the coal, but a considerable quantity of coke is made at some of the coal mines belonging to the company. A vast amount of slag is produced, which is thrown into the water adjoining the furnaces; and, as this hitherto useless material for some time past has been made into building and road material as well as into glass, there certainly is a fine field open for private individuals or a company to commence operations in a branch of industry which has been successfully carried on at two or three places in the North of England, more especially as Mr. SMITH has stated if any glass manufacturer or slag user for any purpose would come to Barrow they would give them 750,000 tons a-year if they would only take it away from the furnaces. The annual output of the blast-furnaces is about 300,000 tons of pig, made from the ore worked in the company's mines, which is now more than 500,000 tons a-year, the Park Mine alone having yielded no less than 230,000 tons in one year.

For the conversion of the iron into Bessemer steel the molten metal is taken direct from the furnaces to the converters, the scrap in the ladle giving an average of about 14 per cent. By having the converters so arranged with the blast furnaces there were considerable advantages. One of these was the regularity they were obliged to have with respect to the blast furnace operations, because, as Mr. SMITH states, so sensitive was the Bessemer converter, as far as regarded the Barrow iron at least, that with a very small alteration in the proportions of the various classes of hematite ore used the difference in the steel produced from the converter, instead of being about 14 per cent., was found running up occasionally to even 30 per cent., so the moment that such a result occurred an explanation was asked from the manager of the blast furnaces as to the waste, so that the main saving in conducting operations in Bessemer steel making was because they managed their blast furnaces better than they had previously done. By the process named a better class of steel was made than they formerly had when they melted their pigs in the cupola. In the making of steel there are a number of 8-ton converters, so that the productive power is greater than at any other works, although the 15-ton converters in use at BOLCKOW, VAUGHAN and Co.'s may now equal it. The converters are some distance from the furnaces, in three sheds, and we believe that the quantity of iron taken to the converters has been upwards of 2000 tons a week. The steel, on being cast into ingots, is then compressed by a process introduced by Sir JOSEPH WHITWORTH. The amount of the pressure whilst the metal was in a fluid state being in proportion to the ductility required. To make steel suitable for manufacturing purposes, according to Sir J. WHITWORTH, it could not be produced with the amount of ductility required without pressure. By the process provision was made for the escape of the gases, and there was considerable flame caused by their ignition during the time of their escape. A large proportion of the steel is converted into rails, for which the company has a high reputation. Altogether there are six rolling mills, two being for rails and two for cogging, each of the latter being equal to 200 tons a day. After the ingots are cogg'd down in the rolls, there are a number of SIEMENS' re-heating furnaces, which

are heated by gas-producers arranged outside the shed. There is also a merchant mill, which is generally kept fully going, and in addition to the rails there is a large production of tyres, axles, and ordinary forgings. There are all the usual appliances, including cranes, lifts, with the other essentials for straightening and cutting off the ends of the rails. The two rail mills are driven by powerful beam engines, and rails 100 ft. in length are now being rolled. With the furnaces in blast, and the other machinery always in operation, it will be evident that the consumption of fuel must be very large at the steel works at Barrow. The company, however, are their own providers, having extensive collieries in South Wales, Lancashire, and the West Riding, so that they are not dependent on others, or on the market value of what they require in the shape of raw material. For the blast furnaces alone at least 400,000 tons of coal will be annually required for the coke.

In South Wales the company have two collieries, the Bryncethin and the Barrow in Glamorganshire, the Dalton in Lancashire, and the Barrow in the West Riding of Yorkshire. As regards the latter the company was the first to solve a most important problem in the South Yorkshire field—the nature of the seams underlying the Nine-foot coal. This was done by the Barrow Company after going a distance of about 500 yards from the surface, when four seams, including the well-known Silksome, were found of fine quality, giving an aggregate of 20 ft. of good coal. By so doing the fact was established that in the neighbourhood of Barnsley there was what might be called a new coal field at least 15,000 acres in extent at a comparatively moderate depth in comparison with mines in other parts of the country. At the colliery alluded to the company is now working the Silksome coal, and there is a productive power of at least 1000 tons a day. A number of Coppee ovens have been put up, and new patent machinery has just been placed on the surface for washing and drying the slack—for the more finely powdered the coal the better the coke—before it is put into the oven. When it is made it is at once forwarded to the works at Barrow. Close to the colliery between 300 and 400 houses have been erected for the workmen, so that in addition to having really founded and made the town of Barrow, the company also done a great deal towards founding another town in South Yorkshire in the centre of a large mining district.

In addition to the iron and steel works, of which the Duke of DEVONSHIRE is chairman, there are other establishments in Barrow finding employment for vast bodies of workpeople. Foremost amongst these is the shipbuilding company, which has done well, being favourably situated for obtaining iron and steel, and also for launching. At the present time the Barrow company are engaged in an iron steamer—the City of Rome—of 9000 tons burden, propelled by engines of 10,000-horse power. But every thing points to the fact that steel will be the material of which ocean-going vessels before so very long will be constructed, so that the position of the Barrow Ship Company will be an exceptionally good one, seeing that they will be able to purchase on the spot, there being no cost of carriage. The difference between the cost of iron and steel plates is gradually lessening, there being the great difference in weight—fully one-fifth in favour of steel—to be taken into consideration. A great deal, however, will depend upon the price at which steel of a really good, uniform, and reliable character can be produced. Boiler-making has also become one of the Barrow industries, and those engaged in it have done well, one company having a speciality transplanted from a southern county by a well-known firm of agricultural implement makers. Engineering, too, has found a home, as well as other branches connected with the iron and steel trades. There are also some other businesses that have been introduced, such as the manufacture of jute, which are calculated to find employment for both males and females. In addition to all these, Barrow is becoming an important shipping port, with vessels crossing the Atlantic frequently, so that the importance of the town, manufacturing and otherwise, is such that it must now be recognised as one of the great centres of trade. Its extraordinary growth must also lead to its having a share of those parliamentary honours which are now enjoyed by decrepit and languishing towns without trade or commerce of any kind, and with not one-fourth of its population.

STEEL RAILS IN THE UNITED STATES.

It appears to us that the use of steel rails upon the great railroads of the United States, coupled with the important reduction which is being effected in the rate of interest current on bonds, is calculated to exert a most important influence for good upon American railroad property. It is the fashion sometimes to assert that the high rates now prevailing for American railroad securities are entirely due to speculative and transitory influences, and that a formidable reaction must sooner or later be witnessed. This is the language of writers of the school of the City editor of the Times. But we confess we do not altogether share these views. We do not wish to take up the cudgels for all American railroads, good, bad, and indifferent; but we do contend that there are great influences at work which have given a solid and reliable impetus to American railroad property. The great material progress of the Western States, and even of some of the Southern and Northern States, the vast influx of European immigrants, the establishment of the public finances upon a thoroughly sound basis, the consequent reduction in the rate of interest on money, the extended use of steel rails, the consolidation of sundry lines into extensive and important groups, are all powerful influences for good, and have told wonderfully in favour of American railroad property, so wonderfully as to very largely justify, in our judgment, the great and striking rise which has taken place in American railroad securities.

We have made these observations because it appears to us that the prosperity of American railroads has a very great deal to do with the prosperity of the iron trade of the world at large. The climate of the United States renders the use of steel rails especially advantageous to American railroads; and in exact proportion as American railroad credit becomes strong and vigorous, in the same degree must the American demand for steel rails become strong and vigorous also. Steel rails have in great part secured the prosperity—or, at any rate, the relative prosperity—of American railroads; and the prosperity of the American railroad interest will bring in its train an extended employment of steel rails. The two influences have reacted upon each other in the past, and it appears probable that they will re-react in a similar fashion in the future. It is noticeable that even now rails and railway *matériel* are leaving English ports, in by no means inconsiderable quantities, for the United States. The demand for rails on the part of American railroads has been and still is so considerable that American rolling mills cannot keep it wholly to themselves, even with the aid of the prodigious duties imposed by Congress on all foreign iron entering the Republic. There are rumours that the next harvest in the United States will be a less liberal one, and that American railroad traffic will suffer in consequence. It will quite time enough for us to realise this contingency when it actually sets in. The production of wheat in England and Scotland certainly does not keep pace with the growth of the population, and has probably rather a tendency to diminish than otherwise. The outlet for American wheat in Great Britain must, then, be increasing, taking one year with another. Moreover, the local traffic of American railroads must also have a decided tendency to expand, having regard to the growth of the United States year by year in wealth and population.

MELBOURNE INTERNATIONAL EXHIBITION.—The official Catalogue of Exhibits, with introductory notices of countries exhibiting, forms two handsome volumes of over 300 pages each. The progress of Victoria is admirably and concisely given by Mr. H. H. Hayter, the Government Statist. There are also highly interesting outlines of the history and position of the several other Australian colonies, and a really large amount of valuable information is obtainable from their perusal. The statistical summary of the Trade and Resources of the United Kingdom, compiled by Mr. P. Lund Simmonds, under the direction of the Royal Commission for the Melbourne International Exhibition, presided over by H.R.H. the Prince of Wales, gives evidence of a large amount of care and attention having been bestowed upon its arrangement. Amongst innumerable other interest-

ing facts he shows the annual value of property and profits, as shown by the amount paid on income tax, has increased in the ten years ending 1877 about 33 per cent. The profits on land have risen from £4,108,565. to £69,438,632.; houses, from 78,125,903. to 103,833,417.; mines, from 5,744,782. to 14,091,257.; ironworks, from 2,013,961. to 2,794,984.; railways, from 18,830,584. to 29,448,166.; and canals, gasworks, quarries, and other profits from 5,812,475. to 11,486,810.; the total increase having thus been from 174,636,270. to 231,093,266. It is certainly clearly shown that there is much prosperity in the old country, however much cause some members of the community may have for complaint.

EXTRACTING METALS FROM THEIR ORES, AND SEPARATING THEM FROM EACH OTHER.

The successful application of electricity to industrial processes by Mr. WILLIAM ELMORE, of Blackfriars-road, has already been several times referred to in the *Mining Journal*, and a process which he has recently patented for extracting copper and other metals from their ores, and for separating metals from each other, will, it is believed, prove of great commercial value. At present the broken ore—cupreous pyrites, for instance—is, after the sulphur has been burnt out, ground to fine powder and roasted with common salt, then transferred to large tanks, and the chloride of copper is dissolved and washed out by boiling water; chloride, sulphate, and other liquors are also obtained in other ways well known for extracting and separating metals from the ore; it is with these liquors, however obtained, that Mr. Elmore proposes to deal. The liquors are allowed to settle and are then run off into clean tanks, over the top of which are arranged connecting rods from one of his improved dynamo-electric machines. From the anode rods he suspends thick plates of spelter or zinc, and from the cathode rods he suspends sheets of copper foil. He suspends the zinc or spelter anodes, after having been amalgamated, in porous cells of suitable size, which he places in the depositing tanks containing the chloride liquors, the porous cells being filled up with a mixture of (say) one part of sulphuric acid to about 24 parts of water by measure. This effectually prevents the deposition of sub-chloride. The current is passed, and as result the copper in the liquor is thrown down, an equivalent of zinc or spelter having in the meantime been dissolved into solution. He now syphons the liquor into large rough wooden precipitating tanks (leaving the deposited or precipitated copper behind), where he treats it for precipitating the zinc in solution therein. The zinc solution liquors always contain sulphuric acid in combination, which acid it is necessary to remove. To effect this the liquor is brought to boiling point, then he adds chloride of lime in quantity sufficient to combine with all the sulphuric acid, so forming a sulphate of lime which readily falls as a precipitate, leaving chloride of zinc in solution, which after being drawn off clear of the sulphate of lime has added thereto sufficient boiling milk of lime to precipitate all the zinc contained in the solution. It is important the chloride of zinc solution and the milk of lime be kept at or about boiling point during the precipitation of the zinc. The resulting oxide of zinc is then dried, and is ready for distillation, with small coal or coal dust in the ordinary way, and the zinc is melted and made into anode plates for re-use in the next working.

The refuse of amalgamated zinc from the porous cells is put into a retort kept for the purpose, and by the application of heat all the mercury is distilled over, and recovered for use in the next working. Should there have been in the ore any zinc it will be found in the chloride liquors and recovered by treatment in the same way as the zinc which is dissolved from the anode, as before described. The same series of operations are carried out when sulphate or other extraction liquors are being operated upon. In practice it is found that every trace of copper is electro-deposited from the copper liquors in a state of chemical purity, and it is thus separated from the iron or any other metals that may be in solution in the extracting liquors, whilst the soda, which is always abundantly present in these liquors, being free from copper very readily crystallises out, and may be used as a bye-product.

The exceeding simplicity and nominal cost of the operation for working Mr. Elmore's process must at once recommend it to the attention of copper extractors by the wet way—in fact, it must immediately supersede the present method of extracting by use of scrap iron, which is not only troublesome, but is over four times as costly in working as compared with Elmore's process. The new Elmore Dynamo-Electric Machine can be seen in operation in London, and is considered one of the most wonderful scientific apparatus which has yet been brought before the public; it should be inspected by all who are interested in any kind of metallurgical operations.

CARBONIC ACID IN COAL.

At the North Staffordshire Mining Institute meeting at Stoke-upon-Trent on Monday (Mr. John Brown in the chair) a paper read at a previous meeting by Mr. A. R. Sawyer, Assistant Government Inspector of Mines, in which he gave an account of an accident which occurred at the Fontaines pit of the Rochebeille Colliery on July 28, 1879, was discussed.

The President said in the Fontaines pit there appeared to have been an outburst of carbonic acid. Some doubt had formerly been expressed as to whether it was possible for such an outburst to cause an explosion, but that seemed now to have been set at rest. Mr. J. Macdonald said this case appeared to be unique in its way. The President observed that it appeared the district had been subject to something of the kind, although not previously to the same extent. Mr. J. R. Haines noticed that the explosion took place in the No. 11 seam, and the question was whether that seam, which the shaft had crossed prior to the explosion, had been previously worked or not. Mr. Sawyer said he thought it had not been previously worked at all, though the pit had gone through it.

In answer to further questions Mr. Sawyer pointed out that this liquified carbonic acid, if it was in a state of liquification, must have been subject to a tremendous pressure, the pressure to liquify carbonic acid being 566 lbs. per square inch. If it were in a solid state he should think the pressure would have been still greater, immeasurably greater. He thought it had not originated from old workings, and he had not heard it mentioned that any water had been given off. Mr. J. Macdonald remarked that he did not think it likely they would be troubled with such a danger in this country. Mr. Sawyer said he hoped not, but there had been a disengagement of carbonic acid in some of the seams in this country, though nothing approaching what took place at the Rochebeille Colliery. Still, it was better to be armed beforehand with the knowledge that there was a possibility of such a thing occurring.

The President asked if it exuded from the solid coal or from old workings only? Mr. Sawyer replied that he believed it came from the solid coal—in some seams more than others. Mr. J. Macdonald said in South Staffordshire there was more carbonic acid than in North Staffordshire. Mr. Sawyer observed that in Saxony there was an immense quantity of carbolic acid given off in the workings, so much so that it affected the health of the workmen, and an interesting paper had recently been issued, containing an analysis of the disease to which miners were subject, owing to the development of this carbonic acid and coal dust. Dr. Clowes, who was unable to attend, briefly expressed his views in writing as follows:—"The explosion at Rochebeille Colliery seems beyond doubt to have arisen from the sudden expansion of liquified (or at any rate highly condensed) carbonic acid, which had permeated a large mass of coal. The coal which withstood its pressure having been sufficiently removed to withstand it no longer the condensed carbonic acid expanded to the increased volume it must occupy under atmospheric pressure, and being present throughout the coal pulverised it in so doing. The lowering of temperature observed strongly support the explanation, as it is known that liquified carbonic acid whilst changing into gas produces such intense cold as to freeze much of the liquid. Further, gases which had until recently resisted all attempts to liquify them by artificial cold and pressure combined have now been liquified and frozen by the coal produced by their own expansion." A vote of thanks was accorded to Mr. Sawyer for his attendance.

NEW GREAT WHEAL VOR.

It is understood that the latest reports from this mine confirm the favourable opinions that have been formed as to the exceptional richness of this property. The following has been received at the offices of the company in London:—

New Great Wheal Vor, June 23.—At No. 1 point we have this week broken rocks of tin; splendid work, and only 7 or 8 fms. from the surface. The miners in the district are continually calling to satisfy themselves of the results, and they are surprised to find the rocks of tin that are brought up from so shallow a depth. I have never seen so beautiful a lode so near the surface.

With these extraordinary developments before them the parties interested are satisfied that they have secured a property valuable in itself, and they are under no temptation to court the aid of professional directors, who too often are ready to make a market of their social or personal status. Even those who do not pretend to be absolutely in the confidence of the owners of this mine must recognise the fact that they are aware of the treasure they have found, and they are not too anxious to press the participation of their gains on the public.

BIRCHINGTON BAY FREEHOLD AND ESTATE COMPANY.

This company is announced with a capital of £150,000, in 30,000 shares of £1 each, the object being to acquire a freehold estate situated at Birchington-on-Sea, four miles west of Margate, and for laying out and developing it as a seaside resort. The property, which has a sea frontage of nearly a mile and is within a few minutes' walk of the Birchington station on the London, Chatham, and Dover Railway, has already had a considerable sum of money expended upon it in the construction of a sea wall and promenade, laying out roads, planting trees, &c., and it is now ready for development by the letting of eligible building sites and the creation of ground rents—a class of investment which has proved highly valuable in various parts of the country—many of the companies established for the purpose having issued their shares in several series, each after the first at a constantly increasing premium. The capital of the present company has been fixed at an amount which will enable it to assist builders and others with money on mortgage on the buildings during construction, thus assuring the rapid development of the estate, whilst the operation must prove highly profitable to the company. It is only proposed to call up £1,10s. per share, after which debentures can be issued on terms which will add to the value of the shares capital.

The salubrity of the district is well recognised by the medical profession. There is a splendid beach, with a fine stretch of firm clean sand, admirably adapted for sea bathing, whilst the subsoil is chalk, and the neighbourhood possesses every requisite for making it a fashionable and popular seaside resort. The value of land in the neighbourhood has greatly increased of late years, and the property has been most carefully laid out with roads 50 ft. wide, planted with trees, and so arranged that almost every house will have a view of the sea, but suitable sites are reserved for squares and recreation grounds, church, chapel, market hall, &c. The property is so laid out that after the necessary outlay of £40,000. on roads, drainage, sea wall, &c., there will be upwards of 20,000 ft. of building frontage, exclusive of reserved sites, which are estimated to bring in a rental of £9,000. a year, or capitalised at 22 years' purchase, £18,000. as the value of the estate when covered, which will either give a permanent dividend of 15 per cent. per annum, or a bonus on realisation of over 100 per cent. after paying at least 6 per cent. per annum. The price to be paid by the company for the estate is £8,000., the vendor paying all expenses of forming the company.

THE AFRICAN GOLD FIELDS.

The shareholders in the Gold Coast Company, Effluvia, and other mines in the same region, will read with interest the subjoined extract from a letter, dated Axim, April 30, written by a gentleman, a valued correspondent of the Royal Geographical Society, now on the African Gold Fields, and who has had large experience with Africa. He says:—"I must admit that when I left England I shared to a great extent the scepticism of most old African traders as to the success of mining operations by Europeans in the Gold Coast Colony; but having now passed four months in the country, and visited all the mines at present at work, as well as many localities suitable for such operations, I have become fully convinced not only of the exceptional richness of the country, but of the certainty of the success of any company obtaining eligible concessions, and working them in a proper manner. If some of the companies at present established have not so far succeeded to the extent anticipated the delay may be attributed in some cases to errors of management, perhaps unavoidable, and in all to the great difficulties encountered in an almost unknown region, with the great additional disadvantage of a most unhealthy climate to contend against. Even simple prospecting is attended with very great difficulty, owing to the nature of the country, with its dense forests and almost impenetrable jungle; and whilst many concessions of great value have already been obtained it cannot be doubted that most of the richest spots have not yet been hit upon, even by the natives. These must be discovered in due time, and I feel confident that there is a great future in store for gold mining enterprises on the Gold Coast, and that the yield of the precious metal must within a very few years exceed the most sanguine expectations. The highly auriferous nature of the soil generally, as well as the vast number of quartz reefs running through the country, is something wonderful, and quite beyond the ideas I had formed before coming here."

RIO GRANDE DO SUL (BRAZIL) GOLD MINING COMPANY.—We draw the attention of our readers to the interesting report of the meeting of the shareholders of this company and their friends on Friday, June 17, to welcome Mr. Henry Cleves, of Cornwall, the founder of the Cape Copper Company, under the Messrs. Taylors, on his return to England from the Brazils, which appears in our columns this week. Mr. Cleves' report will be found in the advertisement columns. Samples of the rich gold ores brought over by Mr. Cleves can be seen on application to the secretary, 47, Finsbury Circus, on any day between ten and four.

WEST CARADON.—The report of the proceedings at the meeting of shareholders held on Friday last will be read with pleasure and satisfaction by the shareholders who were not present at that meeting. The independent report of Capt. John Roberts fully corroborates the high estimate which Capt. Richards and other competent authorities have formed regarding the capabilities of the West Caradon property. Capt. Roberts, who speaks with the authority of long experience, considers that the shareholders have a splendid property. On a recent visit to the mine he visited nearly all the principal points, and he estimates they are worth, in the aggregate, £2,000. per fathom, and it will be seen that he expresses the opinion that if the mine continue to improve as it has done, in a short time it will be worth double that amount. There is not much question that Capt. Roberts is right in his conjecture that the old workers just picked out the eyes of the mine and then allowed it to collapse. That there is a very large quantity of valuable ore left in the mine is undoubtedly. On this point Capt. Roberts speaks in no general terms, but he gives in his report a valuation of the various lodes and points. Whilst in the neighbourhood Capt. Roberts also inspected the adjoining New West Caradon Mine, and expresses the opinion that it deserves a spirited trial, and that the shareholders will ultimately be well rewarded for their outlay and perseverance.

PELYN WOOD.—An influential company is being established to work this valuable mining property, which is divided into 12,000 acres. A limited number will be offered to the public. There is a good prospect of the mine becoming a great prize, the miners employed driving on the lode in the adit level having broken during the last few days several splendid stones of native grey and ruby copper ore, an assay of the latter producing 72 per cent. A short drivage on this lode will intersect a cross lode east and west, and at this junction it is believed by all the old practical miners of the neighbourhood that great quantities of ore will be found. A similar junction is that where the greatest riches were found in the celebrated Lanes-

cot Mine, which is in the same highly mineralised strata, and embraces the same lodes. Those lodes in that mine returned to the shareholders about 300,000*l.* in dividends, and consequently good results are fully expected by the shareholders of this company.

EAST HERODSFOOT.—Bewess lode, lately discovered in this property, presents as fine an appearance on the back of any lode yet seen in this district. Rocks of gossan of the true kind, with spots of silver-lead ore, indicating large deposits at a shallow depth. Across-cut adit is being driven to intersect the lode at a depth of 10 fathoms, when the adit can be continued on its course, reaching a depth from surface of over 40 fathoms available for stoping the ore. There is every chance, in the opinion of practical miners, that great discoveries of silver-lead will be met with in this adit, thus affording unusual facilities for working at a small cost. The shareholders may be congratulated on possessing such a valuable mine, and profits equal to those obtained at the old Herodsfoot will it is confidently thought be made.

WHEAL FORTUNE (Harrowbarrow).—In deepening Bennett's eastern shaft, which is sunk on the Wheal Brothers silver lode, a branch has been discovered at 28 fms. from surface, containing silver-lead, native silver, and sulphide of silver, an average assay of the first sample from which gives 555 ozs. of fine silver to the ton. It is valued at about £50*l.* per fathom. When the shaft has been sunk another 2 fms. levels will be driven east and west along the course of the lode, and it is expected that the ground thus opened up will prove very rich for silver.

IRISH MINES.—Our correspondent, after visiting Bantry and its beautiful bay, extended his journey to Glengarriff, and the lovely scenery of that world-renowned district, and sends us the following interesting sketch:—Meeting a fellow-traveller in Bantry who had never seen the wonderful and beautiful scenery of Glengarriff, we made up our minds to have a sail across one of the most noble bays in Europe to that far-famed spot. After a short time we found Jerry Hurley, an old salt, who designates himself "Pilot by the grace of God." Jerry arranged the terms for boat and crew, and we had a most delightful sail from Bantry to Glengarriff. Landing on the north-east corner of Whiddy Island, we observed a curious formation of black carboniferous slate, forming a large east and west lode, from 10 to 15 ft. wide. This remarkable formation is in thin vertical layers, and the carpenters and sawyers of Bantry and surrounding districts use it instead of blacklead pencils for marking timber, &c. Small pieces we saw cut out strongly resemble Spanish chalk or crayons. Whether it contains sufficient plumbago to make it of value as the blacklead of commerce we had no means of ascertaining. Suffice it large quantities of it could be raised and shipped at about 6*s.* or 8*s.* per ton. Arrived at "the Eccles Hotel," we enjoyed every luxury and comfort. We shall not attempt to describe the scenery, but would suggest to all our friends to do as we have done—viz., "Come and see for yourselves." We may remark, however, that a very interesting old ruin still exists as "Cromwell's Bridge." According to tradition, and we believe it is a historical fact, that when "Oliver" was on his march to the extreme south-west of Ireland his *vedettes* reported that the rivers near Glengarriff were impassable for troops. Oliver at once sent peremptory orders to "the O'Sullivan Bere," Prince of Berehaven, to whom he was about to pay a visit, "that if he did not build a proper bridge for the passage of his troops in 24 hours he would hang O'Sullivan and all his followers," and the bridge was, accordingly, completed within the time specified, the ruins of which, a most picturesque sight, we had the pleasure of viewing. After a delightful sojourn at Glengarriff we again crossed the bay to the south side, and landed at "Blue Hills," which are formed of huge masses of blue clay, and contain an immense quantity of small cubes of iron pyrites. Going to the west we again passed the newly-discovered "Lishereenig Silver Mine," as the public road goes through it; and since our former visit a very important discovery has been made in sinking the shaft, from which we saw magnificent specimens of chloride of silver, &c. In the course of our journey west from Lishereenig to the wild and remote district of "Sheep's-head" we had a look at valuable mineral properties, which we intend shortly to notice. The capitalist is perfectly safe in this county, of which we have had abundant proofs.

GOVERNMENT INSPECTION OF MINES.—The reports of the Government Inspectors of Mines for 1880 have just been issued, and are decidedly unfavourable as compared with those of the preceding year, but less so as compared with 1878. It appears that during the year there were 484,933 employed under the Coal Mines Regulation Act, and 52,908 under the Metalliferous Mines Regulation Acts=537,841 in all. The total accidents were 897, and the total number of deaths occasioned thereby 1402, showing an increase of 54 in the number of fatal accidents, and of 365 in the number of lives lost. During 1880 there was one separate fatal accident amongst every 599 persons employed, and one death by accident amongst every 383 persons employed. There were 28 explosions, resulting in 499 deaths; 415 falls in mines, resulting in 462 deaths; 77 accidents in shafts, resulting in 91 deaths; 177 miscellaneous accidents underground, resulting in 178 deaths; and 88 miscellaneous surface accidents, resulting in 88 deaths. The usual tabulated summary will be published in next week's Journal.

SALE OF PARKEND COLLIERIES IN DEAN FOREST.—These collieries, closed in the spring of last year, have a length been disposed of, and a substantial deposit was paid a few days ago to Mr. J. W. Sulby, of Queen Victoria-street, London, the official liquidator. The collieries are extensive, and were for many years carried on by the Parkend Coal Company, of whom Mr. Sulby, sen., of Bridgewater, stood at the head. The purchasers are Messrs. Lentner, Edelstein, and Mathews (London), who have made temporary arrangements with Mr. S. J. Thomas, the former manager, whereby the pits are to be restarted forthwith. As nearly 800 employees were discharged when the collieries were closed the restart will be regarded with immense interest, and will help to resuscitate some degree of prosperity in the western district of the Forest, where the property is located.

IMPORTANT SALE OF COLLIERIES PLANT.—Messrs. Stephenson and Alexander (Mr. D. T. Alexander officiating) put up for sale by public auction on Wednesday and Thursday a quantity of valuable colliery plant, machinery, wagons, tools, and other materials at the Gellygaer and Llancaiaich Collieries, which were formerly worked by Powell's Gellygaer Colliery Company, but which have been abandoned on account of the exhaustion of the coal worked by the company. The sale will be continued to-day (Friday). On Wednesday there was a very large attendance of buyers from all parts of the country. The bidding was brisk, and the prices realised surprised not a few on the ground. The auctioneer commenced at Llancaiaich Colliery. Here tram plates realised from 2*l.* 17*s.* to 2*l.* 19*s.* per ton. Coal trams, 3 ft. 4*in.* gauge, to hold 25 cwt., were sold at from 12*s.* to 13*s.* a piece; wrought iron binding chain, 6*s.* per ton; scrap iron, 2*l.* 3*s.* per ton; and slate sleepers at 5*s.* 6*d.* per ton; a permanent road weighing machine, 4 ft. 8*1/2* in. gauge, by Pooley and Son, Liverpool, to weigh 15 tons, sold for 40*l.*; a Cameron's patent steam pump, by Tangye, Birmingham, was knocked down at 70*l.*; a pair of horizontal hauling engines, 12 in. cylinder, 2 ft. stroke, by J. and W. Leigh, Pancroft, built in 1857, at 57*l.* 19*s.*; Cornish boilers at about 20*l.* each; a donkey engine for feeding boiler, 8 in. cylinder, 4 in. ram, 12 in. stroke, by Appleby and Sons, at 14*l.* 10*s.*; a low pressure condensing winding engine, with fittings, at 4*l.* 17*s.* On the second day of the sale (Thursday) there was again a very large attendance of bidders. Occasionally the competition ran very high. Business was commenced at mid day with the sale of the sliding rails, and then the wagons were disposed of in lots of three, to suit purchasers. Although in the case of old wagons no very high price was realised, those in good condition fetched 2*l.* to 2*l.* 23*s.* Cast tram plates were purchased at 5*s.* per ton. A horizontal hauling engine, 16 in. cylinder, 2*1/2* in. stroke, with fly-wheel, shafting, gear, 6*1/2* in. cylinder, encased with 9 in. brick and 4 in. hair, 10 ft. stroke, by Messrs. Harvey and Company, of Hayle, was put up for auction. This engine, the auctioneer announced, had been from nine to ten years in use, and it had not cost the proprietors anything for repair. The bidding was started at 40*l.*, and gradually rose to 50*l.*, and from that figure to 60*l.* It advanced by fifties to 90*l.* Then the bidding was 92*l.*, 94*l.*, 96*l.*, 97*l.*, 98*l.*, 99*l.*, and the engine ultimately became the property of Mr. Sykes, of Liskeard, who subsequently purchased four 36-in. Cornish boilers, 6 in. diameter, with fittings complete. A pair of horizontal capstan engines, 14 in. cylinder, 24 in. stroke, with reversing gear, 7 ft. diameter, by the Uskside Engine Company, 1869, realised 18*l.*; and a horizontal hauling engine 52*l.* The egg-end boilers brought in 8*l.* A vertical winding engine, with equal beam and parallel motion, was sold for 40*l.* Amongst the largest purchasers we observed the following:—Messrs. Brown, Lennox, and Company; Powell's Duffryn Company; Messrs. Insole and Sons; Mr. H. W. Lewis, Treherbert; Mr. George, Bristol; Mr. Buggins, Birmingham; Mr. Shepherd, Wolverhampton; Mr. James Thomas, Porth; Mr. Sykes, Liskeard; Mr. Matthews, Liskeard; Messrs. Harvey and Company, Hull; Messrs. Clements and Son, Bedruth.

THE MINING SHARE LIST.

BRITISH DIVIDEND MINES.

<i>Stars.</i>	<i>Paid.</i>	<i>Last wk.</i>	<i>Clos. pr.</i>	<i>Total divs.</i>	<i>Per sh.</i>	<i>Last pd.</i>
3393 Blue Hills, <i>t</i> , St. Agnes	4	5	6... 34	3	0	2 0 ..May 1881
0000 Caron, <i>t</i> , Cardigan*.....	2	0	0... 13%	0	4	0 2 ..Oct. 1878
6000 Carn Brae, <i>t</i> , Illogan?	9	7	11... 24%	24	24	51 11 ..Aug. 1881
1244 Devon GL. Consols, <i>t</i> , a, Tavistock*.....	1	0	0... 10%	10	10	118 7 ..Dec. 1880
4236 Duleek, <i>t</i> , Co. Laois	10	14	10... 56%	55	56	111 13 ..May 1881
6400 East Pool, <i>t</i> , Illogan?	0	9	9... 37%	37	37	23 17 9 ..May 1881
12500 Froncog, <i>t</i> , Cardigan (1000 sh. rs.)	2	0	0... 4%	4	4	3 4 ..Jan. 1881
41000 Glasc. Car., <i>t</i> , 300000sh. £1 pd., 10000 15s. pd.)	2	10	0... 31%	21	2	0 ..6 Aug. 1878
5500 Gorsedd and Merthyn Con., <i>t</i> , Flint	4	0	0... 19%	17	12	18 ..May 1881
1-0000 Great Laxey, <i>t</i> , Isle of Man*.....	0	6	0... 7%	7	12	18 ..Apr. 1881
5400 Green Hurth, <i>t</i> , Durham*	2	0	0... 3%	2	2	0 ..2 Dec. 1880
20000 Grogwinion, <i>t</i> , Cardigan*.....	2	0	0... 3%	2	2	0 ..1 Mar. 1881
10240 Gunnislake (Clifters), <i>t</i> , c ¹	2	0	0... 3%	3	4	0 ..1 July 1880
2880 Isle of Man, <i>t</i> , Isle of Man*	25	0	0... 2%	2	2	83 5 ..Sept. 1880
20000 Leadhills, <i>t</i> , Lanarkshire	6	0	0... 2%	2	2	15 0 ..30 Mar. 1878
43000 Lisburne, <i>t</i> , Cardiganshire	18	15	0... —	—	—	609 10 ..10 0 ..June 1881
100000 McLean, <i>t</i> , Hayle	2	0	0... 5	4	5	1 6 ..2 6 ..May 1881
93000 Minera Mining Co., <i>t</i> , Wrexham*	5	0	0... 9	8	9	89 0 ..1 6 ..Feb. 1881
20000 Mining Co. of Ireland, <i>c</i> , <i>t</i> *	7	0	0... 3%	2%	2%	24 0 ..2 6 ..Jan. 1880
3000 Monia, <i>t</i> , Anglesea	5	0	0... 12	11	12	10 0 ..10 0 ..July 1880
5328 North Busy, <i>t</i> , Blackwater	9	10	8... 7%	7	4	0 ..3 4 ..Oct. 1878
11829 North Hendre, <i>t</i> , Wales	2	10	0... 6	5	6	3 12 ..6 2 ..May 1881
8145 Ditto	1	5	0... 3%	3	3	0 ..8 6 ..1 3 ..May 1881
2000 North Levant, <i>t</i> , St. Just*	13	6	0... 4	3	4	4 16 ..0 ..3 0 ..Feb. 1881
5000 Penhals, <i>t</i> , St. Agnes*	3	17	6... 2	1	2	31 17 ..0 ..1 6 ..Jan. 1881
6000 Penman, <i>t</i> , bar, North Wales*	5	0	0... 5	4	5	0 ..10 0 ..0 ..5 0 ..Mar. 1878
12000 Phoenix United, <i>t</i> , c, Link	5	10	3... 5%	4	5	17 3 ..0 ..2 6 ..Mar. 1880
18000 Pr. Patrik, <i>s</i> , <i>t</i> , (als. 120000 pf. 10 p.c.)	1	0	0... —	—	—	0 ..18 6 ..0 ..2 0 ..July 1880
10000 Red Rock, <i>t</i> , Cardigan	2	0	0... 2	1	2	0 ..4 0 ..0 ..2 0 ..Jan. 1878
12000 Roman Gravels, <i>t</i> , Salop*	7	0	0... 13%	12	13	81 11 ..0 ..5 0 ..June 1881
4000 Rydhalun, <i>t</i> , Wales	10	0	0... —	—	—	0 ..5 0 ..0 ..5 0 ..Feb. 1880
512 South Cadron, <i>t</i> , St. Cleer	1	5	0... 55	60	65	749 0 ..1 0 ..0 ..July 1880
6123 South Condurrow, <i>t</i> , Camborne?	6	5	6... 10	9	10	8 7 ..0 ..5 0 ..Apr. 1881
9000 South Darren, <i>t</i> , Cardigan*	1	16	0... 1%	1%	14	0 ..4 0 ..0 ..2 0 ..Apr. 1880
4500 South Wheal Frances, <i>t</i> , Illogan?	7	12	4... 15%	15%	15%	45 16 ..6 ..10 0 ..July 1880
110000 Tankerville Gl. Consols, <i>t</i> , Salop*	0	10	0... 3%	3	3	0 ..16 3 ..0 ..10 0 ..Jan. 1877
60000 Tincroft, <i>c</i> , Pool, Illogan?	11	10	0... 18%	17%	17%	50 13 ..6 ..0 ..5 0 ..Apr. 1881
15000 Van, <i>t</i> , Llanidloes?	4	5	0... 11	9	10	25 3 ..0 ..5 0 ..Dec. 1880
3000 West Chiverton, <i>t</i> , Perranzabuloe?	20	12	6... 3%	3	4	55 10 ..0 ..10 0 ..Feb. 1878
512 West Tolpuddle, <i>c</i> , Redruth	95	10	0... 32	30	32	33 0 ..1 0 ..0 ..Jan. 1879
1200 West Wheal Seton, <i>c</i> , Camborne?	27	0	0... 22	21	22	223 0 ..0 ..7 6 ..Apr. 1878
6000 West Passet, <i>c</i> , Illogan?	7	0	0... 16%	16	16	27 7 ..0 ..5 0 ..Apr. 1881
12000 Wheal Crebhor, <i>c</i> , Tavistock	2	4	0... 3%	3	4	0 ..40 10 ..3 ..0 ..2 6 ..Mar. 1881
1024 Wheal Eliza Consols, <i>t</i> , St. Austell	18	0	0... —	—	—	42 10 ..0 ..8 0 ..Aug. 1880
6000 Wheal Grenville, <i>t</i> , Camborne	15	0	0... 8%	8	8	0 ..7 6 ..0 ..2 6 ..Jan. 1881
4295 Wheal Kitty, <i>t</i> , St. Agnes	5	4	6... 2%	2	2	12 18 ..6 ..0 ..1 6 ..Jan. 1881
3000 Wheal Peevor, <i>t</i> , Redruth	7	11	0... 18%	18%	19	7 13 ..6 ..0 ..10 ..Apr. 1881

FOREIGN DIVIDEND MINES

35500 Alamillas, <i>t</i> , Spain*†	2	0	0	1½	1½	1½	2	2	9	0	0	9	Mar.	1881	
30000 Almada and Tirito Cons., <i>s</i> *†	1	0	0	½	½	½	0	6	3	0	1	0	May	1876	
20000 Australian, <i>c</i> , South Australia*†	7	7	6	1½	1½	1½	1	5	6	0	2	2	Aug.	1880	
15000 Balfour Creek, <i>g</i> , California*†	4	0	0	1½	1½	1½	0	18	0	0	2	2	June	1881	
20000 Cape Copper Mining,* [†] South Africa	7	0	0	45	42	44	40	42	7	6	1	0	May	1881	
35000 Cesena Sulph. Co., Romagna, Italy*†	10	0	0	—	—	—	—	1	1	0	0	1	Aug.	1879	
50000 Copiapo, <i>c</i> , Chile* (4 shares)	3	6	9	3½	2½	3½	—	1	13	9	0	1	May	1881	
70000 English & Australian,* [†] c. S. Aust.	2	10	0	1½	1½	1½	1½	2	18	9	0	1	Mar.	1880	
25000 Fortuna, <i>t</i> , Spain*†	2	0	0	4½	4½	4½	—	7	17	2	0	1	Mar.	1881	
60000 Frontino & Bolivia, <i>g</i> , New Gran.*†	2	0	0	4½	4	4½	—	0	8	0	0	2	Jan.	1881	
200000 La Plata, <i>s</i> - <i>l</i> , Leadville*	2	0	0	1½	1½	1½	1½	0	6	9	0	0	June	1881	
15000 Linares, <i>t</i> , Spain*†	3	0	0	6½	5½	6½	6½	—	18	14	10	0	4	Mar.	1881
66000 New Quebrada, <i>c</i> , Venezuela†	5	0	0	5½	5	5½	—	0	2	6	0	2	June	1880	
1000 Ditto, Debentures	100	0	0	101	—	98	101	—	6	per cent.	—	—	—	—	
3000 Oregon, <i>g</i> , Oregon, U.S. (pref. sh.)	4	0	0	—	—	—	—	0	2	6	0	2	6	Dec.	1880
50000 Paulinello, <i>c</i> , Chile*†	4	0	0	6½	5½	6½	—	0	13	3	0	4	Apr.	1881	
25000 Pitangui,* [†] <i>g</i> , Brazil (in. 6000 £1 pd.)	10	0	10	—	—	—	—	0	1	0	0	1	Sept.	1880	
10000 Pontigab, <i>s</i> - <i>l</i> , France†	20	0	0	17	—	15	17	23	17	6	0	7	Dec.	1880	
100000 Port Phillip, <i>g</i> , Clunes*† (£2 shares)	1	0	0	—	1½	—	1½	—	1	14	2	0	0	Feb.	1881
54000 Richmond Cons., <i>s</i> , Nevada*†	5	0	0	18½	17½	18	12	12	1	6	1	0	June	1881	
1585880 Rio Tinto,* [†] Sp. Coup. Bds., Huelva, 100	0	0	103	—	102	104	—	5	per cent.	—	—	—	July	1880	
225000 Ditto, shares	10	0	0	21	20	21	—	0	18	0	0	8	Nov.	1880	
40000 Santa Barbara,* [†] <i>g</i> , Brazil	0	10	0	2	1½	2	—	0	11	9	0	1	June	1880	
120000 Scottish-Australian Mining Co.*†	1	0	0	2	—	1½	1½	—	15	per cent.	—	—	Nov.	1880	
80000 Ditto, New	0	10	0	—	1½	—	5½	7½	—	15	per cent.	—	Nov.	1880	
50000 Sentein,* [†] <i>s</i> - <i>l</i> , Ariège, France	1	0	0	1½	1½	1½	—	0	2	0	0	2	Jan.	1880	
225000 Sierra Buttes, <i>g</i> , California*†	2	0	0	1½	1½	1½	—	2	1	6	1	0	Oct.	1880	
46625 Ditto, Plumas Eureka	2	0	0	—	2½	2½	2½	—	2	10	0	0	3	Oct.	1880
253000 St. John of the Rey*† (45 Stock and multiples dealt in),	190	210	—	—	—	—	—	5	p.c. for half-year	Dec.	1880	—	—		
92565 Tarrasí,* [†] <i>s</i> - <i>l</i> , Spain (31000s. £7.p.)	10	0	0	43	42	43	—	6	10	0	2	12	June	1881	
20000 Tuluá,* [†] <i>g</i> , Colombia	5	0	0	—	—	—	—	1	16	6	0	4	Apr.	1881	
25000 Victoria* (London), <i>g</i> , Australia	1	0	0	—	—	—	—	0	13	10	0	0	Feb.	1881	
15000 Western Andes, <i>s</i> , Colombia	5	0	0	—	—	—	—	2	13	0	0	2	Aug.	1880	
2190 W. Prussian (5500 pref. sh. £10 pd.)	10	0	0	10½	10	10½	—	4	—	0	0	8	Apr.	1881	

§ Have made calls since last dividend was paid.

NON-DIVIDEND BRITISH MINES.

<i>Shares.</i>	<i>Paid.</i>	<i>Last</i>
30000 Alston United,* <i>1</i> , Cumberland	1 0	0... 1
12000 Ashsetton, <i>1</i> , Carnarvonshire*	5 0	0...
10000 Atlantic,* <i>1</i> , (res. shares 28,000) ...	1 0	0... 1
36000 Bassett, <i>1</i> , Buxton, Cheshire, & 4, Illogan.	1 0	0...

NON-DIVIDEND MINES—*continued.*

	<i>Paid.</i>	<i>Last wk.</i>	<i>Clos pr.</i>
W Wye Valley, <i>l</i> , Montgomery.*	1 0	0.. 1 1/4..	1 1/4
North Alfred, <i>c</i> , Phillack	0 10	0.. 1 3/4.. 1 1/8	1 1/2
D'Eresby Mount, * <i>l, bl</i> , Carnarv.	1 0	0.. 1 1/4..	1 1/4

NON-DIVIDEND FOREIGN MINES; FOREIGN AND MISCELLANEOUS STOCKS; TRAMWAYS; INSURANCE COMPANIES; GAS, IRON AND COAL, WAGON COMPANIES, &c.

NON-DIVIDEND FOREIGN MINES.

INSURANCE COMPANIES

Issue.	Shares.		
51000	100 Alliance British and Foreign	1	20
10000	100 Ditto, Marine	1	20
50000	30 British and Foreign Marine [L]	1	20
55000	50 Commercial Union	1	20
50000	50 Eagle	1	20
5000	20 Globe Marine [L]	1	20
27500	100 Imperial Life	1	20
13453	100 Indemnity Marine	1	20
100000	100 Lion Fire [L]	1	20
49626	20 L'pool & Lond. Globe (£1 anuity)	1	20
35852	25 London	1	20
40300	25 London and Lancashire Fire	1	20
50000	20 London and Provincial Marine	1	20
10000	100 Marine	1	20
50000	10 Merchants' Marine	1	20
50000	10 Maritime	1	20
40090	50 North British and Mercantile	1	20
30000	100 Northern	1	20
40000	25 Ocean Marine	1	20
	— Phoenix Fire	1	20
200000	10 Queen	1	20
100000	10 Railway Passengers	1	20
200000	5 Rock Life	1	20
50000	10 Sea	1	20
135000	20 Lancashire	1	20
4000	20 Standard Marine	1	20
10000	20 Thames and Mersey Marine [L]	1	20
40640	20 Union Marine, Liverpool [L]	1	20
50000	20 Universal Marine [L]	1	20

IRON AND COAL COMPANIES

<i>Pr.</i>	<i>Clos. pr.</i>	<i>Shares.</i>	<i>Company.</i>	<i>Paid.</i>	<i>P.</i>
1	38 39 1/2	£100	Abbot, John, and Co. [L].....	£ 75 00	35
1	28 30	5	Altitami Colliery Co. [L].....	5 00	3
1	22 1/2 23 1/2	100	Ashbury Co. [L].....	90 00	90
1	25 27	3	Bagnall, John, and Sons [L].....	3 00	3/4
1	6 1/2 7	10	Bonharr Coal Co. [L].....	10 00	1 1/4
1	25 27	10	Bilbao Iron Co. [L].....	10 00	5
1	120 125	50	Bilson & Crump Mdy. Coll [L].....	10 00	3 3/8
1	2 1/2 3 1/4	20	Bolckow, Vaughan, & Co. [L] A 12 00	0 00	23
1	22 23	50	Brown, Bailey, and Dixon [L] 40 00	0 00	55
1	67 69	100	Brown, John, and Co. [L].....	70 00	55
1	6 6 1/2	3	Cakemore, Caseway, Grn. Ord. sh. 3 00	0 00	
2	5 1/2 5 1/4	3	Ditto (7 1/2 per cent. pref.).....	3 00	
1	111 114	100	Cammell and Co. [L].....	80 00	11
2	1 1/4 1 1/4	20	Cannock & Huntingdon Coal [L] 10 00	0 00	11
2	7 1/2 8	10	Central Swedish Iron & Stl. [L] 10 00	0 00	1
1	65 67	5	Chapel House Colliery.....	5 00	
5	57 58	50	Charlton Iron Co. [L].....	50 00	3
5	8 3/4 9 1/2	50	Chatterley Iron Co. [L].....	50 00	6
1	4 4 1/2	10	Chillingdon Iron Co. [L].....	10 00	2 1/2
1	7 3/4 8 1/4	10	Consett Iron Co. [L].....	7 1/2 00	17 1/2
1	8 1/2 9	1	Consett Spanish Ore [L].....	1 00	1
1	47 5 1/4	50	Cooke, William, and Co. [L].....	45 7 00	7
1	8 1/2 9 1/4	20	Darlington Iron Co. [L].....	18 10 00	18 1/2
4	7 1/2 7 1/4	50	Davy Brothers [L].....	22 10 00	4
2	13 1/4 14 1/4	23	Elbow Vale Co. [L].....	20 0 0	8 1/2
3	6 6 1/2	8	Geul. Mining Ass. [L] (fdl. pd.) 80 0 0	0 00	3 1/2
3	8 8 1/2	50	Knowles, Andrew, and Co. [L] 22 0 0	13 0 0	
11	9 1/2 10 1/2	20	Llwyni and Tondi i [L].....	20 0 0	9 1/2
11	23 29	10	Lydney and Tivpool Iron Ore [L] 9 5 0	0 00	
10	Marbella Iron Ore Co. [L].....	10 0 0	6 1/2		
10	Midland Iron Co. [L].....	5 0 0	1 1/2		
10	Monkland Iron & Coal Co. [L] 10 0 0	0 00	2		
4	Myndwy Iron Ore [L].....	3 15 00	3 15		
100	Nant-y-Glo & Blaenau 5 per cent. pref. 100	0 00	34		
3	Nant-y-Glo Coal and Iron Co. [L] 31/2	0 00	3 1/2		

GAS COMPANIES.

<i>rice.</i>	<i>Issue, Shares.</i>	<i>Pd.</i>	<i>Clos. pr.</i>
30	dis 50000. 20 ... Bahia [L]	all.	17 18
4	10000. 5 ... Bombay [L]	all.	5 6
—	10000. 5 ... Ditto, New [L]	4.	4 4 4
5 5	29700. Stk ... Brentford Consolidated	100.	153 158
1 3 8	14000. 20 ... British	all.	32 33
5 1 4	50000. Stk ... Commercial	100.	183 183
2 3 % pm	20000. 20 ... Continental Union [L]	all.	21 22
21	20000. 20 ... Do. do. New, 1869, 1872	14.	15
dis	10000. 20 ... Do. do. 7 per cent. Preference all.	24	25
57	23408. 10 ... European [L]	all.	19 1/2 20 1/2
—	94850. Stk ... Gaslight and Coke, A, Ord.	100.	178 181
—	234200. Stk ... Do. 4 per cent. Deb. Stock	100.	104 116
10 1/2 dis	5000. 10 ... Hong Kong and China	all.	15 1/2 16 1/2
10 1/2 dis	320000. Stk ... Imperial Continental	100.	183 191
1 1/2	363500. Stk ... London	100.	130 134
12 3000. 5 ... Malta & Mediterranean [L]	all.	2 2 1/2	
3 1/2	10000. Metrop. of Melbourne 6 p.c. Deb.	all.	15 16
7	25600. 20 ... Monte Video [L]	all.	2 2 1/2
2 25%	10000. 5 ... Ottoman [L]	all.	6 1/2 7 1/2
27 1/2 pm	30000. 5 ... Oriental [L]	all.	24 1/2 25 1/2
5 5 pm	27500. 20 ... Rio de Janeiro [L]	all.	202 237
18 dis	50000. Stk ... South Metropolitan, A	100.	176 180
4 1/2 pm	50000. Stk ... Ditto, ditto. B	100.	—
8 1/2			
4			
TRAMWAYS.			
<i>rice.</i>	<i>Issue, Shares.</i>	<i>Pd.</i>	<i>Clos. pr.</i>
13 dis	40000. 5 ... Anglo-Argentine [L]	all.	4 5 4 7 1/2
10 1/2	10000. 10 ... Barcelona [L]	all.	11 1/2 12 1/2
8 dis	7140. 10 ... Belfast Street Tramways	all.	6 1/2 7 1/2
6 5 5	3050. 10 ... Birkenhead, Ordinary	all.	5 5 5
2 pm	3000. 10 ... Ditto, 6 per cent. Preference.	all.	10 1/2 11 1/2
2 2 1/2	9290. 10 ... Bristol [L]	10.	13 13 1/2
35	23000. 10 ... Bordeaux Tram & Omnibus [L]	all.	10 1/2 11
7 5	3200. 10 ... Chester [L]	all.	—

FOREIGN AND MISCELLANEOUS STOCKS

ANSWER

MISCELLANEOUS						
23 Australian Agricultural	21	10	..	72	74	
10 Brighton Aquarium [L]	10	0	..	4½	5	
25 City of London Real Property	12	0	..	15½	16	
16 Fore Street Warehouse [L]	14	0	..	18	19	
15 Foster, Porter, and Co. [L]	10	10	..	17	18	
7½ Imperial Credit [L]	7	10	..	—	—	
10 Milner's Safe [L]	10	0	..	9½	10½	
25 National Discount [L]	5	0	..	11	11½	
10 Pawson and Co. [L]	6	0	..	6½	6½	
53 Peninsular and Oriental Steam	50	0	..	59	61	
Stk. Scottish Australian Inv. Co. 100	100	0	..	212	217	
Stk. Ditto New Ordinary	50	0	..	105	110	
Stk. Ditto 6 per c. guar. pref. 100	100	0	..	130	135	
Stk. Ditto 5 per c. guar. pref. 100	100	0	..	111	114	
12 Telegraph Const. & Maint. 12	12	0	..	32	32½	
5 Ditto, 2nd Bonus, 3 per cent	0	0	..	37½	41½	
1 Zoedon [L]	1	0	..	2	2½	

MEMBER COMPANIES

TELEGRAPH COMPANIES			
Shares.	Pd.	Clos.	pr.
Stk. Anglo-American	100 0	53 1/2	54 1/2
10 Brazilian Submarine	10 0	10 1/2	11
10 Cuba	10 0	9 1/2	9 3/4
10 Direct Spanish	9 0	4 1/2	5
20 Direct United States Cable	20 0	10 1/2	11 1/2
10 Eastern	10 0	10 1/2	10 1/2
10 East, Exten. Austr. and China	10 0	11	11 1/2
10 German Union	10 0	11 1/2	11 1/2
10 Great Northern	10 0	13 1/2	12 1/2
25 Indo-European	25 0	28	29
10 London Platina Brazilian	10 0	5 1/2	6 1/2
10 Mediterranean Extension	19 0	2 1/2	2 1/2
8 Reuters	8 0	11	12
Stk. Submarine	100 0	280	290
10 West Coast of America	10 0	4 1/2	5
10 West India and Panama	10 0	2	2 1/2
20 Western and Brazilian	20 0	8 1/2	8 1/2

IRON WEIRS AND IRRIGATION.

The question of irrigation has ever occupied a prominent place in connection with Indian matters, and the result has been that preferable suggestions have come from India, one of the most important being that of Major Gen. Francis Applegath, of the Madras Staff, and now of Bloomsbury, W., and it is confidently believed that his invention would be equally applicable in this country. It is justly urged that the construction of iron weirs in England can be carried out very quickly. They can be placed obliquely across rivers if that plan is proved to be better than the simple one of placing them across the stream, and the openings in the body of the weir can be made so as to represent an iron rake, offering very little resistance to the flow of water. The rivers in India that have stone weirs built upon them have most silted up to the crown of the weir; a little deposit of sand or silt is no objection, as it secures the stability of the weir; but it is highly detrimental to have such an accumulation of sand and silt. The value of iron weirs for India is beyond question, and perhaps it is as well to take into consideration the subject of iron weirs in the event of new weirs being required for the supply of water to London. The expeditious manner in which iron weirs can be manufactured in England, and fixed in the river bed is also a strong point in their favour.

The precise construction will of course vary slightly with circumstances; thus for small or temporary weirs, that may be readily removed from one point of a stream to another, Major Gen. Applegath constructs the same of upright cast or wrought iron sheets or plates of convenient lengths riveted or bolted together, and strengthened by ribs, flanges, or stays, the plates being sunk to any required distance into the bed of the river, and being by preference bevelled off to a thin edge at bottom to facilitate their penetration. At the surface of the bed they have by preference fixed or formed on them horizontally projecting flanges, either on one side or on both sides, for increasing their stability, and to serve on the overflow side as an apron for preventing the falling water from undermining the bed. Such apron may extend some distance in front of the wear, and may be fixed down on the bed by projecting ribs entering the soil, or by screw or other piles to which the apron is fixed. A flange projecting upwards may also be formed at the end of the apron, so as to retain a certain quantity of water upon the same, and thus break the force of the water falling upon it. The weir may have apertures at one or more points of its length for allowing a stream of water to flow through, and such openings may or may not be provided with doors or valves to act as sluices.

In the majority of rivers the engineering difficulties would not be great, and Major Gen. Applegath gives ample detail to meet them when they do arise. According to one modification he constructs the weir or annulet of wrought or cast iron plates, riveted or bolted together so as to form a hollow wall of any required thickness, which is then filled in solid with concrete, brickwork, sand, or rubble. The wall is supported upon a foundation of either screw piles or of brick cylinders sunk into the bed of the river. He provides the same with under sluices closed by doors, by opening which a sufficient scour of water may be obtained to wash away any accumulation of silt that may occur in front of the weir. By preference he forms such under sluices as narrow V-shaped openings in the weir, in which are fitted corresponding wedge-shaped pieces constituting the doors, which are secured in the openings by their wedging action. The lower part of the weir may be extended some distance in front, so as to constitute an apron, and it may be provided with a ridge at the end, so as to form a shallow basin to retain a certain depth of water upon it for the before-mentioned purpose. A further extension of the apron may be formed by iron sheets or plates, as in the first described arrangement.

It will of course be obvious that plates or sheets would make a light and easily constructed weir, but Major Gen. Applegath does not limit himself to the use of these. Sometimes he forms the weir as a hollow or tubular iron structure serving as a tunnel for allowing communication from one side of the river or canal to the other, and which may be protected against the action of the water by rough stones placed on each side. The bottom of the tunnel may be raised a sufficient distance above the bed of the river to allow of under sluices being formed beneath the same, the doors to which may be conveniently worked from inside the tunnel. An apron may be formed on the overflow side of the weir in the same manner as described in the previous arrangement. According to another arrangement he constructs the weir or annulet of a number of vertical iron bars or tubes placed at small distances apart across the river, and tied at top and bottom by cross bars or beams, the weir being thus made to act as a grating through the interstices of which the water and sand or silt may flow. In combination with the said fixed bars he employs other moveable bars, constituting a sliding grating, by means of which the apertures between the fixed grating can be more or less closed, and thus the flow of water through the same be regulated.

The invention has been highly approved in India, and one of the best authorities there with reference to the liability of artificial canals to silt, and give rise to obstruction or great expense for the clearing, remarks that to obviate this Major Gen. Applegath proposes to utilise Nature's work by adopting the course she marks out by the rivers, and to regulate the course and flow of the water by artificial means. These means are the construction of canals in the beds of the rivers themselves; and these canals he would form by the use of iron plates to form ancuts, sluices, aprons, &c., so constructed as to be moveable and capable of regulation according to the state of the rivers in flood or otherwise. Thus, when the rivers are in flood the ancuts could be removed or opened, and when the waters begin to fall, instead of letting them flow wastefully to the sea, or spread themselves uselessly over broad shallows, they would be turned into, or confined in, narrow navigable canals, which would be available for traffic during the greater part of the dry season, and could be used either for goods or passenger traffic by wind or animal power, or even by steamers constructed for the purpose, which might carry passengers at reasonable speed, or draw "trains" of boats laden with merchandise that could be carried at such rates as would place Indian produce in the market on terms to compete with the Western States of America, or other countries which at present cut India out of open markets, because she is heavily handicapped in her inland carriage. The projects of General Applegath indicate a sufficient departure from previous projects to warrant a trial being made on a small scale, and it might be tried on a scale so limited that even a small company might well undertake it, with fair concessions from the Indian Government. And now that the attention of British capitalists has been turned to the auriferous deposits of India these observations are still more important, for without doubt an abundant, and above all a regular, supply of water (for the fact of a locality enjoying a fall of 300 inches a year if it all fall in a few days or weeks is of no industrial advantage) will do much to ensure the permanent profit so anxiously looked forward to.

IMPROVED PUDDLING FURNACES.—It is proposed by Messrs. JONES and HOLT, of West Bromwich, to construct the bed of the puddling chamber of the furnace mainly of two bottoms—of a lower or false bottom, and an upper bottom constituting the true bottom of the bed of the furnace, the two bottoms being arranged parallel to one another, and a short distance apart, so as to form between them a flat air chamber. The false bottom is supported upon pillars or upon masonry, and the true bottom is supported upon notched longitudinal bearers on the false bottom. The ends of the false bottom are perforated, so that blast suitably supplied may enter the perforated flue bridge end of the bed and pass into the air chamber between the two bottoms, and from thence to the perforated fire bridge end. The flue bridge is made hollow, or tubular, and communicates at its middle with an air passage in the flue bridge end of the bed. The ends of the said hollow flue bridge open into flues or passages made between the jamb plates of the bed and the sides of the furnace, and by the circulation of the air through the side flues or passages the jamb plates are kept cool. The fire bridge is also made hollow or tubular, and is perforated at that face which is presented to the fire-place of the furnace for supplying air or blast to the fire-place. The said hollow fire bridge is in communication at its bottom with the

perforated fire bridge end of the false bottom of the puddling chamber, and the ends of the fire bridge open into flues in the side walls of the fire-place, and by means of perforations or slits in the side walls air or blast in the form of jets or sheets may be supplied to the fire-place. At the rear end of the furnace, and opening into the perforated flue bridge end of the false bottom, is a chamber supplied with air under pressure preferably by a fan.

MANUFACTURE OF IRON AND STEEL.

The second part of the Abridgements of Specifications relating to the Manufacture of Iron and Steel* extends from 1867 to 1876, both years inclusive, and, therefore, embraces many of the inventions which have played the most prominent parts in bringing about the revolution in this branch of industry which we have recently seen. There are, for example, no less than 13 of Bessemer's inventions, as well as those of Barff, Cowper, Crampton, Danks, the Terre Noire Company, Henderson, Ponsard, 21 of Dr. Siemens's, and many others, the patents for which have been obtained in names equally familiar to the members of the iron trade. It is remarked that the scope of the present volume comprises all processes for the manufacture of cast-iron, steel, and malleable iron, as well as the special qualities of metal; also the production by rolling of sheets, plates, rails, rods, bars, angle iron, &c. Ample reference is made to all furnaces and kilns particularly applicable to the production of iron and steel, excepting where the inventions are restricted to methods of effecting combustion, utilising waste heat, or economising fuel, which inventions come within another class. There are about 80 inventions alluded to which refer to preparing ore and oxides for reducing or smelting, and these are sub-classified according as they refer to agglomerating with fuel, fluxes, &c., with or without heat, calcining, dressing, separating them from other substances by magnetism, or purifying by miscellaneous processes.

For puddling and puddling furnaces there are almost exactly 300 inventions, of which details are given, these coming under the heads of beds and fettling for puddling furnaces, doors and door frames and screens to protect from heat, general construction, constructing ordinary rabbles and paddles, general processes of puddling, puddling in course of producing cast steel, and in treating reduced metal, using tubular rabbles and injecting tubes, mechanical rabbles, injecting rabbles, oscillating beds and vessels, revolving beds and pan-shaped rabbles, revolving chambers, and so on. In connection with processes for purifying iron and steel there are nine involving the use of electric currents, a subject that might, perhaps, be revived now that electricity is produced so much more cheaply than formerly, and a large number of general processes. For the production of cast steel there are about 500 processes described, and there are some 20 patents for producing spiegeleisen and ferro-manganese. All the necessary material for discussing the merits and novelty of the various two and three high rolls systems will be found; and a pair of geniuses—Messrs. Jones and Thomson—claim advantage for pendant bosh which whistles when it is defective. If every new invention could be made to whistle under similar circumstances what an enormous saving of money ironmasters might effect. The volume is one which every superior officer in iron or steel works should possess himself of if he desires to avoid travelling over already explored ground which has been proved worthless, and it may safely be declared that however much experience an officer may have had, he may easily obtain 5s worth of advantage from the abridgements.

* London: Commissioners of Patents Sale Department, Cursitor-street.

THE FIRST LOCOMOTIVE BUILDER.

Although no one would desire for one moment to ignore the credit due to GEORGE STEPHENSON for his labours in connection with the establishment of railways, it would be equally unfair to permit the names of those who assisted or preceded him in the useful work to be forgotten. The readers of the earlier numbers of the *Minning Journal* when the railway system was being introduced will be familiar with the name of William Hedley, of Wylam, and although he has now passed away, so that no honour conferred upon him any pleasure, his three sons—Messrs. Oswald, William and George Hedley—naturally desire to perpetuate their father's memory as the constructor of the very first successful locomotive engine, and as the discover of the important fact—which alone rendered the success of the railway system possible—that when at work the adhesion of smooth wheels upon the rails was sufficient to produce progressive motion. In claims of this kind there is not unfrequently a disposition on the part of the general public to assume that the claimant, and those immediately connected with him, are partial, and, therefore, not altogether reliable authorities, and it must be acknowledged that confirmatory evidence from a presumably adverse source is in every respect preferable. In the case of William Hedley, there is not only the evidence afforded by the publications of the day, but also that which has fortunately been incidentally furnished by the biographers of George Stephenson and other engineers of the beginning of the century; and the only conclusion that can be drawn is that had William Hedley's engineering skill and carefully made experiments not been available at Wylam, George Stephenson would have remained an ordinary colliery engine tender, and the introduction of railways would have been long delayed.

As a practical biographer of George Stephenson perhaps Michael Reynolds, the "Engine Driver's Friend," is even more reliable than Samuel Smiles, who from his position in the railway world was more likely to derive his information from the friends of Stephenson to an extent which would lead to the exclusion of reference to other workers in the same field from the abundance of material in hand concerning the main subject of the memoir. Yet both Smiles and Reynolds make honourable mention of Hedley, and the latter, although evidently a warm admirer of Stephenson, has incidental allusions to Hedley, which bring him somewhat nearer the prominence to which he is unquestionably entitled. Reynolds* devotes an entire chapter to William Hedley and the plain rails, and gives diagrams of Hedley's test carriage, which demonstrated the practicability of smooth wheels on smooth rails, and remarks that "great credit is due to William Hedley for this discovery, this great discovery;" and he in the next chapter deals with Stephenson "the seventh champion on the roll." In his sixth chapter Mr. Reynolds says—As we have faithfully traced the progress of the engine, it was not necessary up to this point to make mention of the name of Stephenson since he had no connection with the locomotive until some time after it was put to work on the Wylam Railway under Mr. Hedley, who made the way for Stephenson, and gave him a good start at Killingworth. For several years he had watched the working of the Wylam engine, and had an idea that he should like to make one for the Grand Allies the owners of the Killingworth Collieries where he was employed; and in the same chapter he remarks that it was to the Wylam people that Stephenson was at first indebted for everything pertaining to the locomotives, and as locomotives had been working and had passed him on the road close to his home he had every opportunity of making himself thoroughly acquainted with what they could do, and what they could not do, before heating a rivet for his own engine.

Referring to the Killingworth engine, Mr. Reynolds remarks that the locomotive engine had already been invented, six individuals had before him experimented upon it, the last of whom was Hedley, and he had made an efficient and economically working locomotive. Stephenson's engine was a failure, and it was naturally asked—Why have meddled with the engine at all? Why not have consulted Hedley at first? He was at the neighbouring colliery with his engine, and to add to the vexation Hedley's engines were going well; they were at all events more powerful, and they gave no such trouble as this "Blucher" did. It was in endeavouring to avoid the noise which his engine made, and at the same time to avoid using Hedley's chamber in front of the boiler, that Stephenson exhausted directly into the chimney; but it is worthy of remark that although this was a great step in advance Stephenson seems so fully to have recognised that it was but a modification of Hedley's arrangement that he did not patent it. Hedley's engine with the return flue is now in the South Kensington Museum, and demonstrate the excellent progress he had made. It was only in 1828 that Stephenson employed a return flue boiler, whilst Hedley had done so in 1815—he was not only

* "The Model Locomotive Engineer, Fireman, and Engine Boy." By MICHAEL REYNOLDS. London: Crosby Lockwood and Co., Stationers' Hall-court.

willing to copy, but to listen to any practical suggestion, and by doing so he planned the Rocket engine with horizontal flue tubes. This was really the commencement of the present locomotive type, and from what has been here stated it will be acknowledged that Hedley was entitled to even more credit than Stephenson in the matter. The whole narrative as given in Mr. Reynolds's book is well worth reading.

RICHMOND CONSOLIDATED.—A dividend has been declared of 1*l.* per share.

BRATSBERG COPPER MINES.—We understand that Mr. Matthew Loam, the well-known engineer, proceeds to these mines next week, to decide on the necessary arrangements for boring machinery. This shows that the directors are not losing time in carrying out the objects of the company.

A BIG NUGGET.—A mass of ore has been recently discovered in Siberia, in the mines of the brothers Trapeznikoff, which was found on trial to be of pure gold, and to weigh no less than 58 lbs.

THE COAL FIELDS OF NATAL.—The existence of various and prolific seams of anthracite and bituminous coal, some 10 ft. or 12 ft. thick, is confirmed by Mr. F. W. North, F.G.S., who has just returned from an investigation of the coal deposits for the Natal Government. He has found that, although about 4 tons of Natal coal are required to do the work of 3 tons of English, the former is well adapted for locomotive and general steam purposes. It is suggested that the possibility of using cheap local fuel, instead of costly English coal in these distant colonies, must give a great impetus to railway construction, and in Natal will provide a better and more expeditious highway to the Transvaal and Orange Free State. The Railway Bill for the expenditure of 5,000,000*l.* upon railway construction in the Cape Colony, which has just received the sanction of the Assembly at Capetown, is intended by one of the main lines to open up the coal fields of that colony, therefore after considerable delay these coal deposits are now about to be placed in direct communication with the coast and the diamond fields.

LIQUID FUEL.—The generation of heat with petroleum, it is proposed Mr. B. N. Huestis, of Shanghai, to burn that material either, crude or refined, over or in connection with a bed of calcium, or of common lump lime. The usual boiler, fire-box, and a blower are employed. The blower is provided with a cock by which the supply of oil may be regulated. In operation, the boiler being filled with water, a sufficient quantity of broken lime is placed in the fire-box to cover its bottom, and enough oil then run in to saturate the same. To ignite this, a small piece of lime is taken, and after wetting it with oil it is lighted with a match and applied to the furnace; the blower is then turned on, the supply of oil being regulated according to the size of the furnace. The quantity of lime employed will depend upon the size of the fire-box. It is desirable that enough be used to form a thick bed, although a result will be effected when even a small quantity is employed.

PUDDLING FURNACE.—The object of the invention of Mr. JOHN JONES, of West Bromwich, is to construct a puddling furnace that three puddlers can work thereat at the same time, so saving a large amount of fuel and materials, and a greater amount of puddled iron can be produced at a much less cost than in furnaces as at present arranged. By preference the shape of the improved furnace is an oblong, having two of its corners cut off, and this is for better enabling the puddlers to work their metal and to prevent the possibility of any portion of the metal, when in a soft state, becoming wedged in the sharp corners. The other portions of his improved furnace are for the most part similar to those now in general use, except that the stack or flue is built upon the top of the said furnace so as to make room for the third puddler. Hence it will be understood that one puddler can work at a door in the front end of the furnace, and one through doors fitted on each side of the furnace and opposite to each other.

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THE GREAT WESTERN
STEAMSHIP COMPANY, LIMITED.ISSUE OF ORDINARY SHARES AND SIX PER
CENT. PREFERENCE SHARES.NOTICE IS HEREBY GIVEN, that the LISTS will CLOSE on
SATURDAY, July 2nd.Prospectuses and Forms of Application can be obtained from the
Secretary, Grove Avenue, Queen Square, Bristol.

MARK WHITWILL AND SON, Managers.

CHARLES W. CLIFT, Secretary.

Bristol, June 13, 1881.

ALFRED E. J. TREGAY,

MINERAL BROKER AND GENERAL COMMISSION AGENT.

ROCHE, CORNWALL.

CHINA-CLAY. OCHRES. GROUND MINERAL COLOURS.

Correspondence solicited.

RIO GRANDE DO SUL (BRAZIL)
GOLD MINING COMPANY (LIMITED).

TO THE DIRECTORS.

GENTLEMEN.—I have the honour to submit to you the following particulars of your properties situated in the district of Cacapava, in the province of Rio Grande do Sul, as the result of my observations during the time I spent there in discharge of the mission which you entrusted to me.

The ground on which these mines are situated is about 800 to 1100 ft. above the level of the sea, and being out of the tropics in latitude, enjoys a most salubrious climate at all times of the year.

LAVRAS ESTABLISHMENT.—The head-quarters and reduction works of the first company were established close to the village of Lavras, on the left bank of the River Camacava, which flows about 30 ft. below; here are the chief buildings, containing offices, dwelling-houses, stores, stables, &c., and here is deposited the immense accumulation of costly machinery bought by the old company, an inventory of which I handed to you. I will only say of this machinery that I can well believe that three-quarters of the capital of the Brazilian Company (the vendors, or say, £60,000, were expended in its purchase and transport (one item alone—the disintegrator—must have cost several thousand pounds), and that it is lamentable to see such an utter waste of money. Most of the machinery is ill adapted to the purposes required, and if any of it is ever erected it ought certainly not to be on the spot where it now lies.

SITE FOR REDUCTION WORKS.—I consider that the present site is ill adapted for the reduction works of this company for these reasons:—First, because it is too far distant from the principal mine, the ores from which would have to be brought four miles over a hilly country; and, secondly, because during a considerable part of the dry season the supply of water in this part of the river is, I estimate, not more than sufficient to drive from six to nine heads of ordinary stamps. I shall be able to indicate the site which I consider the most eligible, being only a third of the distance from the chief mine, and possessing a greatly increased water-power.

MY TIME being really limited, I confined my observations to the Aurora, Serrito, and Vieira Buena Mines, and the Lagoa. The Aurora property being the only one on which operations were being carried on at the time of my visit, commanded the most of my attention.

SERRITO MINE.—This mine is situated about two miles from Lavras, I have examined the workings, or rather trial pits, which have been made here, and it is enough that I should say that it presents many favourable features, and is well worthy of further development. This I should not hesitate to undertake at once, were it not that you have a much richer and more promising mine in the Aurora, and one which will demand all your energies.

VIEIRA BUENA has had numerous surface trials made on it, but in none could I detect any special promise of good results. I consider that the company would be justified in making a few inexpensive trials in the most inviting points.

LAGOA.—This is a succession of long still pools in the bed of the river Camacava, which has had a high reputation for containing large quantities of gold, and with a view of extracting this, expensive works, such as dams and a canal, were made by the old company, who also imported an engine for the purpose of pumping out the water.

The result of these operations was, so far as I could learn, unprofitable, and from this fact and from my own observations, I do not advise the company to prosecute this work for the present.

AURORA MINE.—It is situated about four miles N.N.E. of Lavras, from whence the road winds its way over an undulating country. This road would require a large outlay, here it could be used as a regular continuous road for the transport of ore.

The mine itself consists, first, of surface, disintegrated felspathic rock highly granulated; this has been stripped off to a depth of from 15 to 30 ft. to the indurating rock below, and underneath this open cutting on the course of the lode 60 ft. long, bearing nearly east and west, is wrought to a depth of 30 ft., with two windlasses fixed over the same, thus laying bare the lode for a considerable distance. At the bottom of these works sinkings have been worked in the most unmineral-like form imaginable, being also the most costly way of extracting the ores. Besides these workings two adits have been commenced, the upper or No. 1 adit, which is at a depth of 10 fms. below the bottom of the open workings, has been driven in a straight line for 35 fms. in length, at which point there is an air shaft, and here the lode is also seen, and presents favourable indications. From this shaft the adit, for some reason which I do not understand, has been diverted off to a north-easterly direction for a further distance of 30 fms. The lower, or No. 2 adit, has only been driven 15 fms., and is at a level 14 fms. below No. 1.

DESCRIPTION OF LODE.—The Aurora lode runs nearly east and west, and dips north from 65° to 75°, being a most favourable angle. The country rock is felspathic gneiss, and the lode is interspersed with chlorite, iron pyrites, and other favourable ingredients.

The entire width of the lode, judging from its upper portion, ranges from 20 to 30 ft. The most regular vein is confined to the northern or hanging wall, throughout which visible gold occurs; obliquely with the vein junctions of lenticular auriferous masses of lodey matter form, which either enlarge the vein or impinge on it, thus materially affecting the commercial value of the mass. The width of this auriferous vein varies from 6 in. to 2 ft., which, with the oblique reunions, represents from 6 to 8 ft. wide, but from 2 to 4 ft. is about the average width of saving or profitable ores.

In its present limited workings this lode certainly presents most promising features, and I have every reason to expect that it will improve in character with increasing depth.

About 18 cwt. of ores from these workings were forwarded to London, and have been received and opened in my presence. A considerable portion of these ores present a very rich appearance, and on the whole being crushed by Messrs. Johnson and Sons, also in my presence, the average yielded gold 64 ozs. 13 dwt. 5 grs.; and silver 17 ozs. 5 dwt. per ton of 20 cwt.

I estimate that there are now deposited near the entrance of the workings about 150 tons of ordinary stamping ores which have been extracted by the present company.

I now recommend that as quickly as possible a shaft should be sunk on the lode in continuation of the present sinking to a depth of 15 to 20 fms., and levels be extended east and west on the course of the lode. Simultaneously with this operation No. 1 adit should be driven to communicate with the proposed shaft and extended therefore west on the course of the lode. This work would cost about £3000, and would occupy about six or eight months, but in the meantime a considerable value could be obtained in the output of ores. By these joint workings I compute that a very large amount of profitable ores would be laid open.

While this work was proceeding a careful survey should be made, so as to fix the exact spot which would be suitable for the erection of the new reduction works. The place which my own observation indicates as most suitable is distant about 1½ mile from the mine, and a tramway should be laid for this distance, for which the country presents no obstacles, and here the wrought-iron water-wheel now lying at Lavras might be erected, together with the requisite number of stamp heads. As I have already mentioned, the River Camacava contains considerably more water at this point than at the village of Lavras.

Native labour sufficient for all ordinary work in and out of the mines was obtained at about 3s. 6d. to 4s. a day, and Europeans, such as Sweden and Norwegians, who I found the best, can also be met with at, of course, higher rates—say 6s. to 8s. a day.

As regards the title, I have every reason to believe that the same is quite clear and good.

In conclusion, I estimate that with an additional capital of about £25,000, the Aurora Mine and the reduction works could be completed, and brought into a profitable state.

I am, gentlemen, your obedient servant,

HY. CLEMES, Mining Engineer.

A MINER, the author of letters on the St. Blazey and Liskeard Mining Districts, &c., recently appearing in this Journal, is now VISITING the Mold, Shropshire, Aberystwith, and Goginan districts, after which purposes MAKING A TOUR OF INSPECTION through WEST DEVON and CORNWALL, commencing early in the coming week, and OFFERS his SERVICES TO INSPECT and REPORT on the MINES of the various districts, and to generally advise on all matters connected with Mining. Fee for inspection and report, ten guineas; letters of advice, three guineas. Instructions to report to be in duplicate to himself and the agent in charge, with a reference to their Bankers, and an engagement not to publish such reports save in the name of "A Miner," unless specially stipulated for.

Instructions for the Welsh districts may be addressed, "A Miner," MINING JOURNAL Office, 26, Fleet-street, and will be at once forwarded.

For Devon and Cornish inspections, address—"A Miner," care of Royal Hotel, Plymouth; Northway Hotel, Tavistock; Harvey's Hotel, Gunnislake; Golden's Hotel, Callington; Webb's Hotel, Liskeard; Pack House Hotel, St. Blazey; R. Symons, Esq., Mineral Surveyor, Truro; Tabb's Hotel, Redruth; the principal Hotel at Camborne, Gwennap, Goldsithney, and Penzance. On arrival at the latter places will enquire at their respective Post Offices, which they consider the principal Hotel.

All communications addressed to Capt. S. BENNETTS, of St. Agnes, would be attended to.

CAPTAIN ABSALOM FRANCIS, M.E.,
GOGINAN, ABERYSTWITH.

CORNWALL.

VERY VALUABLE TIN MINE, WITH MACHINERY.

JOHN THOMAS has received instructions to SELL, AT PUBLIC AUCTION, at the Auction Mart, in the City of London, on Wednesday, the 29th day of June, 1881, at Twelve o'clock noon, as a going concern, the VERY VALUABLE TIN MINE, known as

THE PENBERTHY CROFTS MINE.

Situate in the parish of St. Hilary, in the county of Cornwall, comprising the Vendors' Interest in the Lease under which the mine is being worked, including a stream of water of ample power to drive 100 heads of stamps; together with the MACHINERY, consisting of PUMPING and WINDING ENGINES, with BOILER; 21 heads of stamps (driven by water-power); all the necessary pit-work, and other requisite appliances for a tin mine.

The sett, which is one mile and a quarter long and a mile wide, comprises several tin lodes, and there is a perpendicular shaft sunk to a considerable depth, from which the various lodes are worked (by aid of boring machinery) very rapidly developed. The dues are £25th.

Further particulars and reports may be seen on application to Captain JOHN CURTIS, on the Mine (post town Marazion); or the Auctioneer, Redruth, Cornwall.—Dated June 14, 1881.

IN LIQUIDATION.

BETTWS-Y-COED LEAD MINING ASSOCIATION (LIMITED).

NORTH WALES.

IMPORTANT SALE OF VALUABLE MINING PROPERTY & MACHINERY.

MESSRS. EDWIN WOTTON AND CO. WILL SELL, BY AUCTION (as a going concern), at the George and Railway Hotel, Bristol, on Thursday, June 30th, at Three o'clock in the afternoon (subject to conditions of sale which will be then produced and read).

THE LEGAL INTEREST IN THE LEASE.

Together with the MACHINERY and EFFECTS of the Bettws-y-Coed Lead Mining Association (Limited), now in Liquidation.

The mine, which is a very valuable one, is situated in the township of Gwydyr, in the county of Carnarvon, North Wales, about 2½ miles from the Bettws-y-Coed Railway Station, and the same distance from the Llanrwst Station on the London and North-Western Railway. It is held under a 21 years' lease from June 28th, 1877; royalty, 1-12th; minimum rent, £100 a year to merge into dues.

The sett is very large, extending over 900 fms. on the course of the lode, and has been very favourably reported on by John Kendall, Esq., Mining Engineer, London; Walter Eddy, Esq., Mineral Surveyor, Fron, Llangollen; Jas. Richards, Esq., and Capt. Henry Rhoda, of the Devon Great Consols Mines; Capt. Wm. Littlejohns, of the Deep Level Mines, Holywell; and Capt. Wm. Benets, of the Coed Mawr Pool Lead Mine, Carnarvonshire; and copies of their reports may be obtained at the auctioneers.

An inventory of the machinery and all particulars may be obtained on application to Capt. WHITFORD, on the premises; to the Auctioneers, Taunton, or 4, All Lane-lane, Exchange, Bristol; or to C. J. SIMS, Esq., 2, Drapers' Gardens, Throgmorton-street, London; Messrs. REED and COOK, Solicitors, Bridgwater; or JOHN GURNEY, Esq., Solicitor, 13, Union-court, Old Broad-street, London, E.C. Dated Truro, June 4th, 1881.

ELLSMORE COLLIERY, FOREST OF DEAN.

ON SALE, BY PRIVATE TREATY, and under exceptional circumstances, COAL FIELD, lying in the south-west part of the FOREST OF DEAN, very near to Sydney Port and Station.

It is under the Shute castle Inclosure, between Bream and Drybrook Bottom.

The SEAMS are the lower ones—viz.,

THE COLEFORD HIGH DELF, about 90 yards deep.

THE UPPER TRENCHARD, about 95 to 100 yards deep.

THE LOWER TRENCHARD, about 115 yards deep.

Area of the Coleford High Delf Seam about 55 acres, and of the latter Seam upwards of 80 acres respectively.

The coal is well adapted for steam or household purposes, and it is free from sulphur.

The Severn and Wye Railway runs through the property, and only requires a siding to where the pit is to be sunk.

The present payment to the Crown is only £5 per annum.

Tenders to be sent to the Undersigned on or before the 30th inst.; the lowest or any Tender not being necessarily accepted.

MENZIES AND SON, Colliery Valuers, &c.,
53, North John street, Liverpool.

CARESFIELD COLLIERY AND ESTATE, comprising 1900 acres, more or less, of FREEHOLD COAL; 500 acres, more or less, of FREEHOLD FIRE-CLAY; 50 acres, more or less, of LEASEHOLD FIRE-CLAY; and 500 acres, more or less, of LAND; and the MINES OF COAL under the estate of Ravenside, containing 225 acres, more or less, all situated in the parish of Ryton, in the county of Durham, will be

OFFERED FOR SALE, BY PUBLIC AUCTION, At Newcastle-upon-Tyne, on or about the FIRST WEEK in AUGUST, 1881.

Further particulars and information will be given in future advertisements, and can be obtained from Messrs. J. and G. H. GEDDES, Mining Engineers, Edinburgh; Messrs. T. and R. ARMSTRONG, Land Agents, 14, Hawthorn-terrace, Newcastle-upon-Tyne; Wm. GREEN, Esq., Mining Engineer, Thorne House, Blaydon-on-Tyne; or Messrs. CLAYTON and GIBSON, Solicitors, Guildhall, Newcastle-upon-Tyne.

The BUILDINGS and LAND are of FREEHOLD TENURE, and must be taken at £2500, the price which has been set upon them by a competent local land surveyor. They consist of a foundry 66 ft. 8 in. in length, and 33 ft. 4 in. in breadth; smith's shop 69 ft. by 19 ft. 3 in.; adjoining office 11 ft. by 7 ft. 7 in.; large carriage-house and loft over; a two-storied stable and loft, with shed at the back; extensive and superior store rooms, show room, pattern room, and office, with every other business convenience.

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The house in which the proprietor resides comprises good kitchens, dining and drawing rooms, five bedrooms, chaises and other closets, pantry, washhouse, fuel house, and other modern appliances, and an abundant water-supply.

The adjoining house, occupied by a respectable tenant, contains kitchen, pantry, washhouse, dining and drawing rooms, three bedrooms, &c.

The plant and stock-in-trade are to be purchased at a valuation, and comprise a steam-engine (the boiler of which is fed by an unceasing spring of water on the premises), a lathe, crane, weighbridges, forges, beams and scales, racks, &c., a moderate stock of grates, stoves, and other manufactured articles, with iron, sand, and general trade materials.

The buildings are strongly constructed, and are in excellent repair. The walls are of good stone, and the roofs are slated.

The situation of the property cannot be surpassed. It is at the Launceston terminus of the Great Western Railway, in the centre of a rich agricultural district, in the mining county of Cornwall, and it has been admirably adapted by its present proprietor to business purposes and a comfortable home.

Applications to treat for the purchase should be made within the present month, or before the 23rd July next, to Mr. Wm. Langdon, the proprietor; or to Messrs. PETER AND SON, Solicitors, Launceston.

Dated 13th June, 1881.

ON SALE,—COMPRESSING, PUMPING, OR WINDING ENGINES.—SECONDHAND PAIR of 26 in. HORIZONTAL ENGINES; SECONDHAND PAIR DITTO, 33 in. diameter, sold together or separate.

EDWARD RATCLIFFE, HAWARDEN.

ON SALE,—SECONDHAND WINDING ENGINES IN PAIRS; cylinders from 10 to 26 inches diameter.

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ON SALE,—THREE GALLOWAY BOILERS, 30 ft. by 7 ft., with all recent improvements. FIFTY other BOILERS, various sizes, ready for delivery. Price List on application.

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SPARE MACHINERY AND MATERIALS FOR SALE, BY PRIVATE CONTRACT, at GOOLE PELLAS MINES, St. Ives, Cornwall.

ONE 40 in. PUMPING ENGINE, new cylinder, spring ring, &c., with or without BOILERS.

ONE 30 in. STAMPING ENGINE, wrought-iron shaft, TWO FLY-WHEELS.

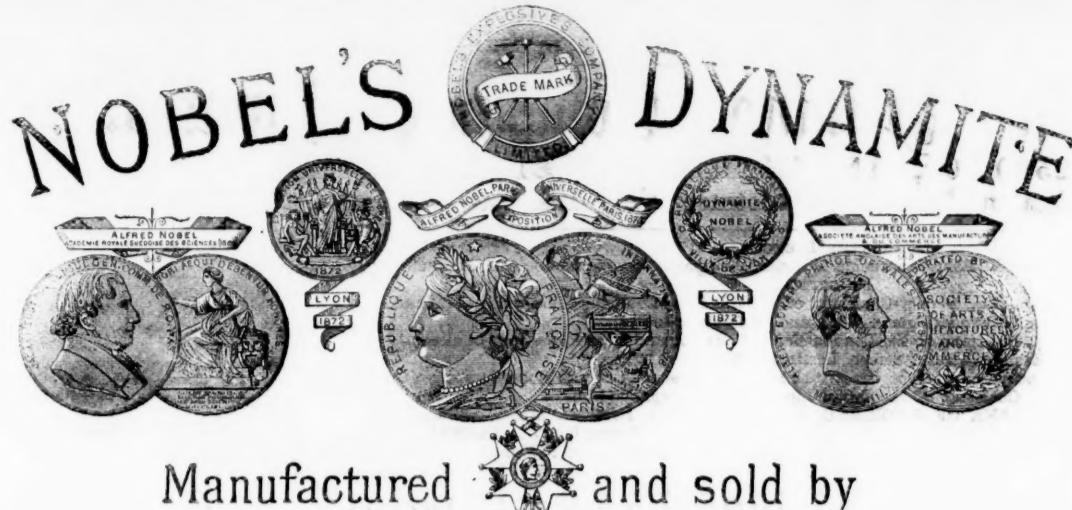
ONE 24 in. WINDING ENGINE, complete; and a 22 in. ditto.

Sundry BOILERS, in first-class condition, from 11 tons down to 7 tons.

Large balance and angle bobs, nearly new; new and lofty shaft tackles; dry tubes; 200 fms. of 3½ in. mild steel wire rope—new from maker, never used; a large quantity of pitwork, from 10 in. down to 6 in.; new plunger poles, from 10 in. down to 7 in.; strapping plates, various sizes; a large quantity 2 ft. shovels; and other materials in general use in mines.

For particulars and prices, apply to Capt. BUGELHOLE, West Providence Mines, St. Ives, Cornwall.—Dated May 2, 1881.

FOR SALE, BY PRIVATE TREATY, the MERSEY COPPER WORKS, WIDNES, LANCASHIRE.



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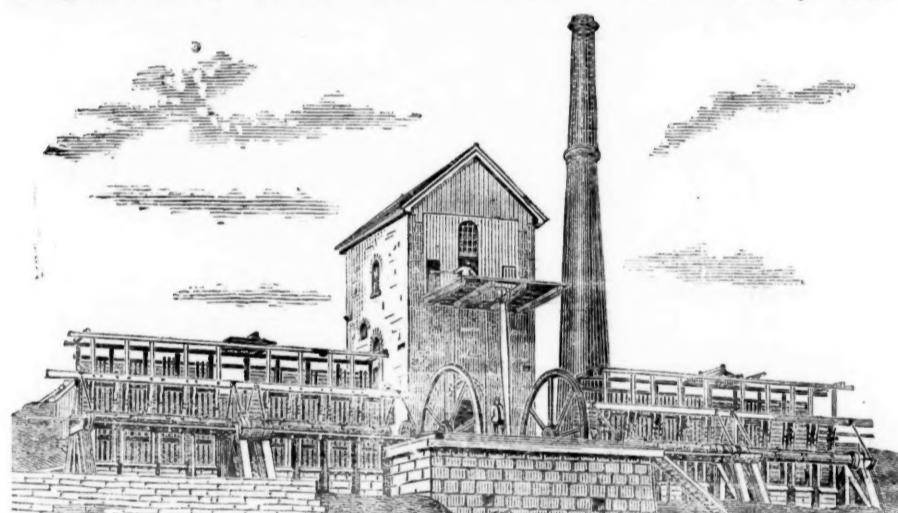
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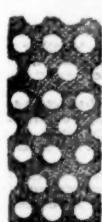
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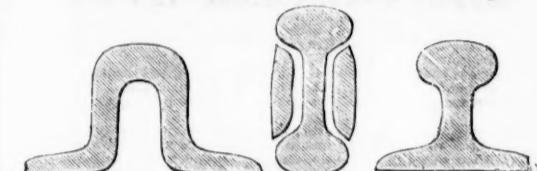
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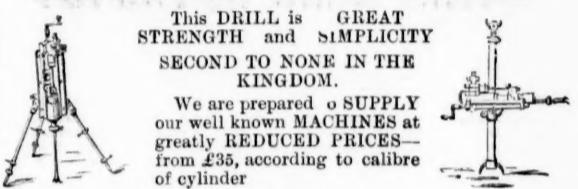
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STEEL OF ALL KINDS. FIG IRON OF ALL KINDS
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MINING AND CIVIL ENGINEER,
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American Business and Law, offers his services at moderate charges for Reporting
on Mining and other Property in any of the above-named States or Territories,
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and, as to best mode of utilising the property, will assist in settling existing difficulties
by compromise, and in disposing of developed mining property when held
at real value; offers his assistance for securing undeveloped mining properties at
home prices. As to care taken in reporting, reference is made to the *Mining Journal*
Supplement, April 1, 1876, containing a report on property of the Maxwell Land
Grant and Railway Company; as to technical standing, to the prominent men of
the trade—compare *Mining Journal* of Aug. 30 and Nov. 31, 1872, and *New York*
Engineering and Mining Journal, Feb. 28, 1874.

TO ENQUIRIES.—Having received numerous letters asking for
my gratuitous opinion on mining properties, I beg to state that I cannot afford time to answer letters of that description without the inclosure of a fee
at least of a half-a-guinea.

R. SYMONS,
Truro, June 15.

THE MINING RECORD. Only \$3.00 a year.
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of the Seams in the principal Collieries of the various districts, with Index, Geo-
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CAPITAL, £500,000, IN SHARES OF £1 EACH.

Payable:—2s. 6d. on application, 7s. 6d. on allotment, and 10s. on 1st August, 1881.

HONORARY DIRECTOR.

His Excellency Senor J. M. DE ROJAS, Venezuelan Minister, Plenipotentiary to the Court of St. James.

DIRECTORS.

ALEXANDER GRANT DALLAS, Esq., Deputy-Chairman of the Rio Tinto Company (Limited)—CHAIRMAN.

ERNEST NOEL, Esq., M.P., 29a, Grosvenor Square, S.W., and Lyndhurst, Sussex.

WILLIAM MACANDREW, Esq., Chairman of the London Bank of Mexico and South America (Limited).

JAMES STUART TROTTER, Esq., 2, Walton Street, London, S.W.

Sir CHARLES CLIFFORD, Deputy-Chairman of the British and Australasian Trust and Loan Company (Limited).

EDMUND A. PONTIFEX, Esq., Chairman of the Cape Copper Mining Company (Limited).

BANKERS—THE NATIONAL BANK OF SCOTLAND, 37, Nicholas Lane, Lombard Street, London, E.C.

AUDITORS—Messrs. PRICE, WATERHOUSE and Co., 44, Gresham Street, London, E.C.

SOLICITORS—Messrs. CAMPBELL, REEVES, and HOOVER, 17, Warwick Street, London, W.

Edinburgh: Messrs. LAWRIE and KER, 4, St. Andrew's Square.

BROKERS—London: Messrs. PANMURE, GORDON, and Co., Hatton Court, Threadneedle Street, E.C.

Liverpool: GEORGE CHAMBERLAIN, Esq., 34, Knowsley Buildings.

Manchester: R. A. ARMITAGE, Esq., 10, St. Ann's Square.

Glasgow: Messrs. AULD and GUILDFORD, 65, St. Vincent Street.

SECRETARY (pro tem.) and OFFICES—FITZ GERALD ARBUTHNOT, Esq., 9, WALBROOK, LONDON, E.C.

PROSPECTUS.

This company has been formed for the purpose of acquiring and further developing the well-known Mocupia Estate and Chile Gold Mine, situate in the State of Guyana, Venezuela, and held under grants from the Government for a term of 50 years (of which about 44 years are still unexpired), renewable for a further period of 50 years.

The property comprises an area of about 650 acres, and contains the greater portion, so far as developed, of the noted Chile Gold Lode. The surface is covered principally with wood, which is available for mining purposes, and for fuel.

Several auriferous quartz veins runs through the estate, but the proved extent and richness of the Chile lode has hitherto induced the proprietors to confine their attention solely to its development. The directors of this company also propose to limit the operations to this vein, and, at a later period, to sell or lease the remaining gold lodes comprised in the property.

THE CHILE GOLD MINE.

The lode on which this mine is situated passes through and underlies nearly the whole of the company's property. Its extent and richness have been proved for upwards of a mile in length, the amount of gold-bearing quartz ascertained being practically inexhaustible.

Commencing at the western boundary, the vein has been traced on the surface for a distance of 1900 ft., to the engine-shaft. This shaft has been sunk to a depth of 230 ft.; the lode has varied from 3 to 6 ft. in width, and yields in the bottom from 1/2 to 3 ozs. of melted gold to the ton of 2000 lbs.

The Old Shaft, 950 ft. east of the engine-shaft, has been sunk to a depth of 220 ft., through a continuously productive lode, and is now in quartz 5 to 6 ft. wide, yielding from 2 to 3 ozs. of melted gold per ton.

The New Shaft, 183 ft. east of the latter, has reached a depth of 358 ft., and is now in quartz from 3 to 4 ft. thick, yielding from 3 to 4 ozs. of melted gold per ton.

From the New Shaft to the eastern boundary, a distance of 3850 ft., the outcrop of the lode has been extensively worked by the ancients, which is a sure indication of its richness.

The superintendent of the mine, writing on the 6th February last, states that the lode is changing in character in the bottom of the mine; the quartz is becoming richer in gold and more charged with sulphurates; and on assaying several samples, he was surprised to find that they gave results varying from 2 to 16 ozs. of gold to the ton.

For upwards of 10 years the operations have been confined principally to exploring and proving the Chile lode, and the reduction works have been limited to the number of stamps requisite for treating the ore derived from sinking the shafts, &c. The following official return of gold from the company's Mocupia mill demonstrates how regularly the vein has increased in richness as depth has been obtained:—

Years.	No. of hours run.	Average stamps.	Tons crushed.	Ozs. melted gold.	Ozs. per ton of gold on basis of 1000ths.	Fineness
1871	969	12	994	747 1/2	75	750
1872	2717	12	2377	1,550 1/2	80	800
1873	3118	12	2394	2,184	90	875
1874	2363	10	1092	1,942 1/2	88	880
1875	4323	10	2629	3,655 1/2	116	850
1876	5685	10	2812	4,061 1/2	94	860
1877	5828	10	2864	4,653 1/2	162	895
1878	5126	10	2768	7,448	68	905
1879	7113	12	4462	11,942 1/2	68	908
1880	7362 1/2	20	6762	14,525 1/2	115	912

The above quantity has been extracted from what is termed the native or free

gold in the quartz. The gold contained in combination with the sulphurates is reserved in the tailings for future treatment when proper appliance have been erected.

The following extracts are taken from the report of Mr. George Attwood, A.M. Inst. C.E., F.G.S., &c., late manager of the adjoining Potosi Mine:—

"During the past 10 years about £300,000 have been expended in acquiring and developing the Chile property and demonstrating its value. The above table of actual results proves how regularly the vein has improved in richness as depth increases, and Mr. March, who has managed the mine for seven years, estimates the future yield of gold at from 2 1/2 to 3 1/2 ozs. to the ton of quartz.

"I fully share Mr. March's views in this respect, and his opinion is further confirmed by the results obtained from the small portion of the Chile vein worked by the Potosi Company, between the old and the engine shafts of your mine. Mr. Provis, engineer to that company, states in his report, dated the 2nd of October, 1880, that the quartz from the Chile vein had produced on an average during the preceding 12 months 3 ozs. of gold per ton, and was still improving, the last month's return having reached 3 1/2 ozs. per ton.

"Moreover, the section of the Chile vein, worked by the Potosi Company, here referred to, and from which they extracted 52,338 ozs. of gold, value £200,676, during the 3 1/2 years ending September, 1880, dips wholly into your property. (See accompanying section B.)

"In preparing an estimate of probable returns from your mine when worked on a large scale, for which the explorations carried on during the past ten years afford such reliable data, I prefer, in order to ensure being on the safe side, to adopt the low yield of 2 1/2 ozs. of gold per ton of quartz treated.

"The mill should be immediately increased by the erection of 70 additional stamps, with engine, boilers, and amalgamating machinery, &c., all of which could be erected at cost of £27,000, and in less than 12 months. You would then have an effective mill of 100 stamps working on Chile ore, which would crush 1 1/2 ton (of 2000 lbs.) per stamp in 24 hours' work, making a total of 150 tons of ore crushed per day.

"With proper organisation, I estimate that the mill would run at least 23 days in the month. In California and Nevada crushing-mills run 28 out of 30 days. The quantity of gold ore crushed, according to the above estimate, would be 3450 tons during one month. Estimating the yield at only 2 1/2 ozs. of gold per ton, of 92 fineness, of the Mint value of £3 17s. 5d. per oz., say market value £3 17s. per oz., the return per month would be 8625 ozs. of melted gold of the value of £33,200.

"Taking the total expenditure at the mines and in London at five times the amount of the greatest cost ever incurred when running 20 stamps (700 ozs. per month), the total monthly expenditure would amount to 3500 ozs., leaving a profit balance of 5125 ozs. melted gold, or £19,731 per month, equal to a profit of £236,772 per annum.

"Judging by the actual profit realised from 20 stamps during the year 1880, allowing for the 10 stamps since erected, I estimate the profits from the existing mill for the 12 months commencing July 1 next at £35,370. And from 30 of the additional stamps it is proposed to erect, working for six months, from 1st January to 30th June, 1882, £17,655.

"Total net profit for first year from the 1st July next £53,055 or upwards of 10 per cent. on the capital of the company.

"By the 1st July, 1882, I estimate that the proposed additional machinery will have been erected and brought into full operation, from which period a profit of at least £200,000 per annum should be realised.

"My opinion as to the richness of the Chile gold vein is founded upon three

years of actual experience of the lode, during a portion of which time I managed the adjoining Potosi Mine. I last visited the Chile Mine in December, 1880, but have received extracts from the Superintendent's advices up to February 7, from which I learn that the lode in the shafts has altered considerably in character, the sulphurates have increased in quantity, necessitating some additions to the amalgamation works to deal effectively with the same and save the gold. Meanwhile, several assays have been made of the ore taken from the deepest workings, giving from 8 to 16 ozs of gold per ton."

"The Chile Gold lode, for over one and one-third miles in length, passes through and nearly underlies the whole of your estate, and in some places it outcrops or comes to the surface on the same; but all the deep and rich portion of the vein is in your property, as will be seen by reference to the accompanying plan and sections."

"I have no hesitation in highly recommending this grand property as a safe investment for capital. I consider it the most extensive and the richest gold mine at present known in Venezuela, and one of the richest proved gold mines in the world; the amount of gold actually discovered on the Chile vein being practically inexhaustible. The 70 additional stamps, with engine, &c., can be erected and brought into operation within one year, when I consider your property will be worth fully one million sterling."

"In conclusion, I may state that the 'Chile' is one of the richest and best developed gold veins I have ever had the opportunity of examining during 18 years of foreign mining experience, including eight years on the great Comstock Lode of Nevada, during which period the mines under my management yielded dividends to the proprietors amounting to upwards of two millions sterling."

The Mocupia estate, and the Chile gold mines, with engines, stamp-mill, machinery, plant, buildings, stores, gold ores, &c., &c., have been purchased as a going concern, from the Gold Agency (Limited) for the sum of £425,000, leaving £75,000 for working capital. Of the purchase-money £165,000 will be taken in shares of the company. This sum includes all expenses up to the allotment of shares (except brokerage), and the company will take possession of the property and receive the profits derived from the mines as from the 1st day of July next.

Accompanying this prospectus are reports from Mr. J. M. March, C.E., superintendent of the Chile Mine, and from Mr. George Attwood, C.E., F.G.S., late manager of the adjoining Potosi Mine.

The only agreements entered into are as follows:—

Agreement, the 30th day of May, 1881, between Mocupia and New York Mining Company of the one part, and the Gold Agency (Limited) of the other part; and another, dated the 9th day of June, 1881, between the Gold Agency (Limited) the promoters of this Company, of the one part, and this Company of the other part, which, with the Memorandum and Articles of Association of the Company, and the Reports, may be inspected at the offices of the solicitors.

Samples of the quartz, rich in visible gold, taken from the shafts and other points of operation in the mines, may be inspected at the offices.

Application for shares may be forwarded, together with a deposit of 2s. 6d. per share, to the company bankers, the National Bank of Scotland, 37, Nicholas-lane, Lombard-street, London, E.C.

Where no allotment is made, the deposit will be returned in full.

Prospectuses and Forms of Application may be obtained at the company's bankers; or at the offices, 9, Walbrook, London, E.C.

The SHARE LIST is now OPEN and will CLOSE on SATURDAY, the 2nd July, for TOWN, and MONDAY, the 4th, for COUNTRY APPLICATIONS. Upwards of 6000 Shares are already placed among the Directors and their friends.

The Birchington Bay Freehold Land and Estate Company (LIMITED).

ISLE OF THANET, COUNTY OF KENT.

INCORPORATED UNDER THE COMPANIES ACTS 1862 TO 1880, WHEREBY THE LIABILITY OF THE SHAREHOLDERS IS LIMITED TO THE AMOUNT OF THEIR SHARES.

CAPITAL £150,000 IN 30,000 SHARES OF £5 EACH.

(WITH POWER TO INCREASE.)

Payable 10s. on Application, £1 on Allotment. It is not expected that more than £2 10s. per Share will be called up.

DIRECTORS.

SIR E. H. MEREDYTH, Bart., J.P., Warnbrook, Chard, Somerset.

J. WARRINGTON MORRIS, Esq., Architect, Gracechurch Buildings, E.C.

MR. ALDERMAN RANCE, Solicitor (ex-Mayor), Cambridge.

BANKERS—Messrs. BARNETTS, HOARES, HANBURY'S, and LLOYD, 60, Lombard Street, E.C.

Messrs. RANSOM, BOUVERIE, and CO., 1, Pall Mall, East, S.W.

BROKERS—Messrs. BLYTH and HUTCHINSON, 79, Cornhill, E.C., and Stock Exchange.

CONSULTING ENGINEERS—Messrs. KINNIPPLE and MORRIS, 2, Westminster Chambers, S.W.

SOLICITORS—Messrs. SAUNDERS, HAWKSFORD, and BENNETT, 27, King Street, Cheapside, E.C.

AUDITORS—Messrs. J. LORD, McDONALD and CO., Chartered Accountants, 35, Queen Victoria Street, E.C.

SECRETARY—JOHN C. BOWSER, Esq.

OFFICES—ALBERT BUILDINGS, 51, QUEEN VICTORIA STREET, E.C.

PROSPECTUS.

In fixing the capital of this company, have provided for a sum from which, with judicious temporary advances, with ample margin, can be made on mortgage of the buildings during construction, and thus secure the rapid development of the estate. The company being the freeholders, this investment will be fully secured, and prove very remunerative, the more especially as it will probably be turned over several times before the whole of the property is covered with buildings.

The directors do not propose to call up more than £2 10s. per share, but as soon as the capital now offered for subscription is taken up, an issue of debentures, not exceeding £100,000 in all, bearing a fixed rate of interest, will be made for the above purpose. These debentures will form a first charge upon the company's assets, including the uncalled capital as well as the loans to builders.

The issue of debentures in lieu of calling up all the capital is so well understood by investors in landed estates that it needs no explanation, the effect being to enhance very considerably the value of the shares, as a great part of the debentures will be paid off out of the profits of the company.

The salubrity of the air in this locality is well recognised by the medical profession. Birchington Bay possesses in an eminent degree every requisite, rendering it one of the most attractive, healthful, and accessible seaside resorts on the Kentish coast. The property is bounded on its eastern frontage by a picturesque range of white sea cliffs, and in the centre